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KIT p.65

PC GAMES

PERSONAL ENTERTAINMENT SYSTEMS AND SOFTWARE

February/March 1993

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An IDG Communications Publication

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- SoundBlaster Pro 2.0
- ProAudio Spectrum 16
- ThunderBoard for Windows

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B-17 FLYING FORTRESS PG. 80



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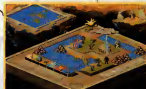
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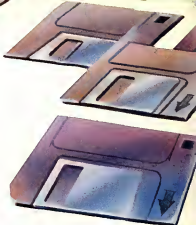
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24 "NOW HEAR THIS!"

Plug in an audio board and let dazzling music, sizzling sound effects, and crisp dialogue blow you away. **PCGames** looks at four popular candidates: AdLib Gold 1000, SoundBlaster Pro 2.0, ProAudio Spectrum 16, and ThunderBoard for Windows. By Tom Carlton.

32 "SMALL & ANGRY MEN"

WANTED: Able-bodied men 1mm tall. No experience necessary. Work is dangerous, death imminent. Must be able to carry out orders with a minimum of joystick supervision and work gamer's hours (10 p.m. to 4 a.m.). Attitude helpful. Inquire at CPU. By Wayne Kawamoto.

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"The Big One" by Jim Ball: B-17 Flying Fortress

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LARRY DUNN



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PC GAMES MAGAZINE

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Wizardry

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EDITOR'S PAGE

GET SMART, OR GET EATEN

By now, you'd better be out from under the holiday crush. The tree should have made it to the curb, the decorations should be stuffed back in their boxes, and all the battery-operated toys should be lying exhausted in the corners. By now, you'd better be ready to play that new game or two you picked up in December, or finally try out that new PC you bought for the family.

PC makers have been lusting after the home market for more than a decade, and though that hunger may never be fulfilled, they're making progress. Lower prices and prepackaged systems have helped put plenty of PCs in homes during 1992.

Good news, right? Sure. The more people with PCs in the house, the more people playing Top Gun, the more kids learning about ecology, the more dragons slain. But there's a nasty side to all those new PCs, especially when they're bought by people who have never owned a personal computer before.

Let's face it: PCs are tough to set up and keep up, particularly when they're used as game machines. Compared with the VCR — still the bane of most consumers when it comes to assimilating technical information — the PC is like nuclear physics. Unfortunately, it doesn't look as though PC manufacturers or entertainment publishers are doing much about it.

Windows and DOS *do* come already installed on most PCs nowadays, of course. And most game makers *do* simplify setup enough so that all you do is type *A: INSTALL* and begin feeding floppies. Beyond that, though, things get tricky.

Sound-board installation, for instance, sometimes goes smoothly; when it doesn't, you can get bogged down fast by such impenetrable terms as *IRQ*, *DMA*, and *DIP*. Power PC users may know such jargon intimately, but the average PC player just wants to play, not spend hours figuring out why things won't work or talking to tech-support people (who, since they're not right there with you, often are no help at all).

Games add to the problem. The biggest, beefiest titles demand not only a lot of hard-disk space, but a lot of memory, too. It's not uncommon for a game to want 580K or more of the 640K available in DOS' low-memory area. Memory managers help, of course, but with no single memory manager standard — three or four good ones are in competition — the potential for conflict, and thus a no-go game, is ripe.

PCGames does what it can. Our reviews comment on installation headaches and memory hogs when appropriate. And our hardware features spotlight the easiest-to-add add-ons. (Look for an analysis of multimedia upgrade kits in our next issue.) But PCGames doesn't *make* the PCs, or *make* the games.

Computer and computer-game makers better wise up — and make their wares simpler to set up, simpler to run — or they'll get eaten up by Nintendo, Sega, Sony, Tandy, Philips, and whatever other company enters the electronic entertainment market. We want to play, not work to play. — Gregg Keizer, Consulting Editor



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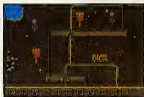
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THE GAME PRESERVE

THEY'VE GOT YOUR MPC

They've also got your answering machine, your television, your voice mail, and your fax. Tandy's new **Sensation!** (\$1999, monitor not included) multimedia computer integrates many functions performed currently by separate electronic appliances.

Aimed squarely at the home and small-business markets, **Sensation!** is an MPC-compliant machine built around an Intel 80486SX chip. Included with the computer is Tandy's **WinMate**, a software organizer for Micro-soft Windows.

Tandy is emphasizing a number of non-traditional uses for **Sensation!**—some immediately available, some requiring additional hardware. For instance, you can set up a digital voice-mail system with the built-in modem, but watching *Monday Night Football* while you work on your spreadsheet requires an extra board (\$399.95 suggested retail). For more information, contact Tandy Corp. at (817) 390-3011.

VIRTUOUS PILOT

If you're careful, CH Products' new flight yoke might help you earn your wings. **Virtual Pilot** (\$109) is an airplane yoke, or



Tandy's new **Sensation!** The stereo amplifier (between monitor and CPU) sounds great, but costs an extra \$99.95.

steering wheel, that mounts on your desk and plugs into the joystick port of any PC compatible. It offers complete X- and Y-axis control, as well as a throttle control and two fire buttons. The **Pro** version (\$149) adds flap and gear controls, as well as eight-way viewing capability.

Dan Hayes, executive vice president of CH Products, says that the company plans to submit **Virtual Pilot** to the Federal Aviation Administration (FAA) to "win approval for pilots to log hours for their Instrument Flight Requirement (IFR) and Visual Flight Requirement (VFR) pilot ratings."



Not all fun and games: **Virtual Pilot** yoke is serious business.

To date, no computer flight-sim-related manufacturer (hardware or software) has won any sort of FAA approval or sanction for its products. For more information, call CH at (619) 598-2518.

LET MY LEMMINGS GO

As if jumping, climbing, digging, and building weren't enough, those cute little Lemmings have now evolved into 12 distinct tribes, each with its own abilities. In **Lemmings 2: The Tribes** (\$59.99), players must use the special skills of each group to bring all 12 together in a mass exodus from Lemmingsland. Watch for Polar Lemmings, Ninja Lemmings, Highlanders, Beach Lemmings, Space Lemmings, Cave Lemmings, and, yes, Classic Lemmings. For more information, contact Psygnosis at (617) 731-3553.

LIBRARY O' GAMES

EMS Professional Software is shipping an updated version of its **Best PD/Shareware Games Library** (\$59.50) for IBM compatible PCs. This collection of 150 entertainment titles is available on 13 1.44-megabyte disks or a single CD-ROM. An intelligent database shell lets novice

users locate a particular game quickly, install it, read and print the instructions, and play the game without ever seeing a DOS prompt. For more information, contact EMS at (301) 924-3594.

THE GAME'S AFOOT

Sherlock Holmes and the Baker Street Irregulars are back in town, hot on the trail of the bad guys in Icom Simulations' **Sherlock Holmes, Consulting Detective: Volume II** (\$69.95). With more than 90 minutes of color-motion video, three new cases — "The Two Lions," "The Pilfered Paintings," and "The Murdered Munitions Magnate" — will test your deductive skills. Icom has added a live actor for the courtroom scenes, as well as fast-forward and rewind buttons to make reviewing evidence easier. For more information, call Icom Simulations at (708) 520-4440.

SHEERWARE

Send the kids to bed before you check out Megatech's first PC game release, **Cobra Mission** (\$79.95). This 11-megabyte import from Japan wraps R-rated graphics around an adventure/arcade engine.

The goal of the game is to clean up the island of Cobra by putting a halt to the illegal activities of the psychotic master criminal who's taken over the island. Along the way you'll battle street gangs, defeat crime bosses, and rescue grateful female kidnappers who reward stalwart heroes with more than just a peck on the cheek.



"Children of the night" make their sweet music as you explore a Transylvanian village in SSI's haunting *Veil of Darkness*.

Megatech plans to continue importing games from the Japanese PC-9801 platform, aiming at 18- to 40-year-old players. For more information, call Megatech at (800) 421-2032.

LURID LURE

Konami's latest is **Lure of the Temptress** (\$49.95), from Revolution Software. This adventure role-playing game features *Virtual Theater*, an environment in which the game world advances and changes in real time, developing independently of the player. The player's actions affect rather than dictate events, while non-player characters

interact continuously with one another. Can Diernot defeat Salena and the evil Skorl? Only time will tell. For more information, contact Konami at (708) 215-5100.

SSIMON SAYS

Strategic Simulations is on the move again with several new titles for 1993.

Look out, sports fans — the company's working on a complete revamp of one of the PC's most-popular games. **Tony LaRossa Baseball II** (\$59.95) will feature more closeup camera angles (batter's shoulders, zoom in on fielders) and more player animation,

including jumps and dives, headfirst slides, and underhand tosses for double plays. Replays will be shown on jumbo in-stadium monitors. Also under development is a software system for importing game data from other PC baseball sims. Look for the new-and-improved Tony LaRossa in the first quarter of '93.

Available in March 1993, **Veil of Darkness** (\$59.95) is the story of a cargo pilot who crash-lands in a haunted valley in Romania's Transylvanian Alps in the late 1930s. The player investigates his new surroundings, only to come face-to-fang with a vicious vampire, Kairn, who has been feasting on local villagers for centuries.

Dark Sun: Shattered Lands (\$79.95) is SSI's first new RPG game engine since *Pool of Radiance* in 1988. *Shattered Lands* takes players into a harsh desert world ravaged by sorcery. You and your party must create a rebel force powerful enough to destroy the tyrannical king's army. *Dark Sun* is scheduled for release in March 1993, but SSI already has plans for an expansion disk: **The Grey Isles Campaign**, due out in June 1993 for \$39.95.

Flashback (\$49.95) combines rotoscoped graphics with polygon-based cinematics in this side-view arcade adventure. Delphine Software, the group that created *Out of This World*, is claiming smooth 24-frame-per-second animation.

Eye of the Beholder III: Assault on Myth Drannor (\$69.95) concludes the Beholder series with additional graphics, a deeper plot, more role-playing,



Join the king's army in a perilous mission to free the people of Turnvale in *Lure of the Temptress*.

and new monster companions who travel with the valiant men of Darkmoon. Only heroes need apply: The lich Acwellan awaits.

Lastly, the only limit to AD&D scenarios is your own imagination when assisted by SSI's **AD&D Unlimited Adventures: Build Your Own Fantasy Role-Playing Epic**. The package includes a library of 112 monsters, 16 NPCs, and 250 art images with which players can populate their adventures. It'll be available in April for \$59.95. For more information, call SSI at (408) 737-6800.

CAPSTONES

Capstone Inc. is blowing through the realms of pop culture with several new releases.

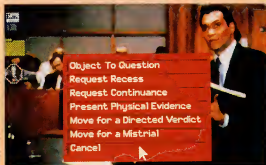
Just in time for the holidays, **Home Alone 2** (\$44.95) pits players against the Wet Bandit burglars in a series of chases through crowded city streets and other locations, including New York's Plaza Hotel and Central Park.

Trolls (\$44.95) features animated critters with frizzy hair on an arcade quest to rescue baby trolls.

And if you've always wanted to be a lawyer but couldn't afford law school, **LA Law** (\$59.95) lets you try eight cases as Victor Sifuentes, Abby Perkins, or Jonathan Rollins.

Capstone is promising still more titles featuring popular icons, including **Wayne's World: The Computer Game** and **Terminator 2 Cyber Chess**, to be shipped on both CD-ROM and floppy disk.

For the more-intellectual gamer, Capstone offers



Put Sifuentes' inimitable style to the test in **LA Law**.

Bridge Master (\$59.95), complete with network and modem play, super-VGA, multiple skill levels, bidding conventions, and your choice of background music. For more information, contact Capstone at (800) 468-7226.

TEN-HUT — AGAIN

What do MicroProse, Electronic Arts, and Empire Software have in common? They each have a game in Empire's **Combat Classics** (\$59.95), combining F-15 Strike Eagle II, 688 Attack Sub, and Team Yankee in one retro-package.

Whether you're on land, under the sea, or in the air, Empire's got you covered. For more information, call Empire Software at (416) 731-4175.

STONE GROOVE

PC Comix, publisher of HyperComix, has announced a double dose of **Lance Stone**, to ship in the first quarter of 1993. This special edition will feature issues 2 and 3 of the series, at a suggested retail price of \$20.

According to Jeff Angus, director of marketing at PC Comix, this version will include "more than twice as many panels, more sound, more spot animation, more plot threads, an improved interface, and a special utility that will enable users to adjust the pace of the action, set sound levels, and automatically bind new editions to previous issues stored on a hard disk." For more information, call PC Comix at (800) 944-0181.



The Wet Bandit burglars hit the high spots in **Home Alone 2**.

DATeline: COMDEX

As the burgeoning worlds of cartridge-based and disk-based hardware crowd closer and closer together, some companies are creating products that bridge the two like sparks bouncing between the spheres of a Van Der Graff generator.

Turbo Technologies Inc. (TTI) is now manufacturing the **Turbo Duo**, a dedicated game machine that plays Turbo Grafx 16 chips and new Turbo Duo games from CD-ROM.

In April TTI also plans to unveil **Turbo Duo Intelligent Link**, a SCSI adapter that will turn the Turbo Duo into a fully functional CD-ROM player suitable for use with most computer platforms and file formats.

The Turbo Duo retails for about \$300; the Intelligent Link will cost about \$100. For more information, call Turbo Technologies at (310) 641-4622.

KNOWLEDGE IS POWER

Knowledge Adventure's **Dinosaur Adventure** (\$49.95) is a scientifically accurate exploration of this fascinating prehistoric phenomenon. The package covers the rise of dinosaurs from early reptiles, dinosaurs' lifestyles, the science of fossil formation and discovery, and major excavations around the world. It's the fifth in KA's *Interactive Books* software series, and is intended for dino buffs of all ages — 3-year-olds to adults. For more information, call Knowledge Adventure at (818) 542-4200.

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- 8 **QUOTABLES** • More Mensa® USA
- 8 **ENJOY ANCIENT, ENTERTAINING BOARD GAME NINE MEN'S MORRIS** • ACES HIGH • TANGRAMS • CONNECT THE DOTS • PICK-A-PEG • Mensa® Puzzles
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MASTER PUZZLER

Get ready for another puzzle-filled session of genius gymnastics in **Island of Dr. Brain** (\$49.95).

Sequel to **Castle of Dr. Brain**, **Island** is the newest member of the *Sierra Discovery Series*. Players must conquer a pile of puzzles to retrieve a special battery from Dr. Brain's secret island. The game features 26 math, language, and science-oriented problems, at three levels of difficulty.

Parents should note that the *Sierra Discovery Series* carries an unconditional money-back guarantee. If for any reason, parents aren't convinced of a game's learning value, they may return the game for a full refund. For more information, contact Sierra On-Line at (209) 683-4468.

INTERPLAY AT WORK

You'd think that a company with "play" in its name could relax once in a while, but InterPlay is chewing up the channel with four new releases.

Battle Chess Enhanced CD-ROM (\$79.95) for DOS and MPC features a new 30-minute animated tutorial with helpful play tactics and the history of each character humorously portrayed.

Battle Chess 4000 (\$59.95) combines clay animation and a strong chess algorithm with a rating of over 2167 USCF. Each piece has been modeled in clay, photographed, and digitized. In addition, if BC 4000 sees an exceptionally good move, it will add it to its database.



Return to the wacky world of Dr. Brain's secret island for another delightful round of puzzle solving.

For a change of pace, try **Solitaire for Windows** (\$49.95), with 12 popular games in VGA. Players can use alternate scoring, timed play, and two-deck play.

Finally, **Castles II: Siege and Conquest** (\$59.95) adds attack options to the castle-building machinations of the original. King Charles of Bretagne is dead, without a clear successor to the throne. Unless you can play a delicate game of diplomacy and warfare, your head could be the next to adorn a rival's wall. For more information, call InterPlay at (714) 553-6678.

BEARWARE

The Berenstain Bears have come to life from the pages of children's books in a Compton's New Media series designed to entertain and instruct elementary- and preschool-aged kids.

Learn About Counting (\$24.95) teaches basic mathematics by counting fruit, measuring water in a well, and weighing honey jars.

In **Learn About Letters** (\$39.95), the bears are on a quest to find the alphabet; your child learns by picking up letters along a path. As an introduction to

spelling, the youngster enters the first letter of a word when an image pops up on screen.

Junior Jigsaw (\$24.95) increases visual memory and shape-recognition skills through ten puzzles. You can enhance the difficulty level by increasing the number of pieces up to 60 as your child masters each brain teaser.

Fun with Colors (\$39.95) is designed to encourage creativity and independent thought. Using more than 70 pieces of clip art and 48 colors, children create scenes that include word balloons and animated pictures.

The **Learning Essentials** package (\$29.95) contains **Learn About Puzzles**, **Learn About Colors**, and **Learn About Music**, a program that teaches children notes to their favorite songs. For more information, call Compton's New Media at (619) 929-2500.

WINDOW STARS

Star Graphics recently announced **A Collection of Classic Games** (\$34.99) for Windows. The package contains three games, two screen savers, and a handful of wallpaper designs.

Beleaguered Castle, **Patterns**, and **Morris** are traditional thinking/logic games, relying on planning and mental gymnastics rather than keyboard acrobatics or encyclopedic knowledge. The screen savers feature "hot corners" that activate when you send the mouse there. The wallpaper designs make great desktop backgrounds. For more information, call Star at (503) 241-5663. □



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TOP GUN

NEW YEAR'S RESOLUTIONS

On the ground or in the air, sometimes a jet jockey's promises are just made to be broken...

By Cameron Crocetti

Yeah, I know — I'm a month late. I also know that four out of five columnists in America have done this topic this year already. So what? I don't have to be original, just entertaining. Therefore, in the spirit of the season, here are my "Top Gun Ten New Year's Resolutions."

1. I resolve to never break visual contact on a bandit. There I am, pulling 6 Gs, trying to get my nose around on a Su-25, and I figure, "He's not going anywhere — I'll just check my radar real quick." Bad move. In about nothing flat, I'm starting up at a silk canopy and he's trading jokes with his wingman on the way home. Arg.

2. I'll set up my landing approach from the proper distance from the airfield. After spending a morning flying a Sopwith Camel, I switched over to a Boeing 727 for a change of scenery, but forgot to remind my brain of the extra size and weight. Needless to say, Boston Air Traffic Control was very upset at the hole

I put in the runway. The passengers in first class weren't too thrilled, either.

3. I promise to always finish off my primary target. Primary targets are so boring. They're almost always on the ground, they're heavily defended, and the bad guys are expecting you. Give me a surprise dogfight any day.

4. Henceforth, I'll warn my co-pilot before attempting to barrel-roll my helicopter. All I needed to do was flip the bird upside-down for just a second, but boy, did I hear about it for weeks. While I'm on the subject of radical maneuvers, I promise not to go hedge-hopping in my F-16 unless it's absolutely necessary. After all, 450 knots at 50 feet is just plain silly.

5. In the coming months, I promise to purchase at least two pieces of flight-sim-related hardware. Who said New Year's resolutions couldn't be fun? (But fellow flight-sim addicts should check out the accompanying sidebar — if they dare.)

6. I hereby vow that I've buzzed the Sears Tower in Chicago for the last time. Resolutions are made to be broken, right?

7. For this year to come, I'll cease and desist calling wide-body passenger airplanes "garbage trucks," "cement mixers," and "fatso." Whenever I step behind the yoke of one of those commercial monsters,

I wonder whether any flight-sim company will create a sim that takes off on "Car Wars." You get a rusty old 747, load it up with WWII surplus weapons, and then try to smuggle contraband all over North and South America. Along the way, you fight off attacks from privateers, other smugglers, and pirates in Cessnas outfitted with special "Board and Storm" hull-cutting equipment.

8. I promise not to play "chicken" with other commercial airline pilots. Also, if I'm playing an air-traffic-controller sim, I promise not to see how close I can get two planes to pass together. Furthermore, even though small recreational planes play hell with traffic patterns, I promise not to leave them sitting on the runway without clearance. Recreational pilots are people, too.

9. From now on, I'll pay attention to the flight-deck officer when trying to land on a carrier. LSOs get so upset when they wave you off and you land anyway. There'd be plenty of room if they'd just move that honking big control tower.

10. Finally, this year I swear to fly higher, turn harder, and shoot straighter than ever before. Good luck with your own New Year's Resolutions, and be sure to throw another bandit on the fire for me. Clear skies! ☐

LOCKED IN

The following is a public-service announcement.

Maybe I should rethink resolution #5. I have a confession to make: I'm a prisoner of my own chair. I should have seen the signs — steadily growing piles of clamp-on, add-on, bolt-on specialty devices to support my flight-sim addiction. It's gotten to the point where if I need to type, I have to undo the clamps on the CH control yoke, then slide the keyboard in front of me and sit on the edge of my seat, because the Interface Dynamics Thrustmaster Brackets stick out from the arms of my chair, preventing me from scooting it close enough to my desk.

Equipment overload isn't a pretty sight. I realize that flight-sim controls are specialized, but plugging in a different device for each program has turned the back of my computer into a braided rats' nest. I've got a sign up warning small children of the danger, but it's only a matter of time before someone disappears, leaving behind only bones and a cable with a suspicious bulge. It's too late for me, but there's still time to save yourself. **Beware the hardware.** — C.C.

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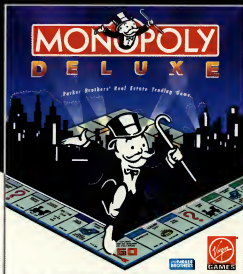
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ROLE CALL

GENTLE SPIRITS

Do that voodoo you do so well — but do it better.

By Bernie Yee

"Show me the magic," said Anthony Quinn in a modern-day remake of Shakespeare's *The Tempest*. Quinn played Prospero, the Bard's memorable magician, who worked in mysterious ways, certainly in ways unfamiliar to computer-gaming mages.

Magic is a curious commodity in role-playing, and as I've said in other columns, something quite different from science, its counterpart in science-fiction role-play.

Science gets its punch from gee-whiz technology, while magic relies on mysticism and the supernatural — matters beyond our understanding.

And sometimes it seems that magic has lost its zip, its mystery. What magic needs is some of that . . . well, that old black magic back in its blood.

ROLL OF THE DICE

Too often, magic in fantasy role-playing games seems like a set of formulas, a bunch of dice rolled to calculate damage.

In *Crusaders of the Dark Savant*, for instance, spells are like machines, where you turn up the dial for

more-mystical volume. And *Crusaders* isn't alone. Most fantasy role-playing games make magic seem just mundane.

Any magic system based on *Advanced Dungeons & Dragons*, which often uses dice to calculate damage effects, is limited because all the juicy spells (like *Wish*) require a measure of randomness and human control — something those number-crunching 486es just can't provide.

In the seminal work *Lord of the Rings*, J.R.R. Tolkien created a fantasy world more compelling, it seemed, than the real world. Gandalf the wizard, the second-most-powerful being in Middle-Earth, practiced a magic quite unfamiliar to veterans of *Bard's Tale III*, where high-level mortal necromancers routinely tossed around offensive spells that scored impressive damage.

Gandalf's magic was subtle and unfamiliar, mysterious and almost uncontrollable. What did the master wizard do? Set aflame some dead trees, cast a light spell, magically shut a door, break a bridge. Hardly anything an Avatar couldn't do in *Ultima VII*. Tolkien's weapons seemed imbued with a subtle mysticism, instilling fear in orcs as much as it split them open.

There have been a few attempts at making magic

more mystic in more-recent role-playing games. One that stands out is Interplay's adaptation of *Lord of the Rings*. Its designers sought the kind of subtlety they saw in Tolkien's universe. *Lord of the Rings'* magic system is very simplistic, with few spells and minimal power.

In this game, magic provides a lever, a hint, and a nudge — sometimes in the form of offensive capability, other times in magical counters to other spells. You won't catch Gandalf the White casting spells that wipe out hordes of orcs or trolls in *Two Towers*.

SAINTS AND SORCERERS

But the most-impressive magic system today belongs to MicroProse's groundbreaking and compelling fantasy role-playing game *Darklands*, which taps into a real-life mythology, our own concept of magic in this world, the real world.

Darklands sports two competing magic systems, *alchemy* and *hagiolatry*.

Darklands' alchemy is the mixing and transformation of chemical components with a catalytic philosopher's stone into potions with impressive effects.

Hagiolatry relies on the Catholic saints revered by the Church of that period. Medieval residents called upon specific saints for their patronage, as each saint had a certain province

where he or she held ascendancy — Francis of Assisi held sway over wildlife, for example.

This kind of "realism" provides a commonly known backdrop of religion and alchemy — commonly known, but still mysterious.

Darklands' magic means learning formulae, finding components, using your philosopher's stone, and hoping your alchemical skill is up to the task.

And while these potions can turn the tide of battle, they can't prevail all on their own. You still need steel and muscle to finish off the enemy.

Similarly, calling on saints requires some luck and piety, and results in subtle changes in the environment, or even just knowledge. Magic becomes a tool, not a sledgehammer.

BELIEVE

Where does this leave game designers? In all likelihood, they'll keep trying to involve gamers in the magic process, whether that's gathering reagents in *Ultima* or learning hand gestures in *The Summoning*. But few designers have the resources, or the desire and wherewithal, to create a "believable" magic system like *Darklands*.

Which makes a real gem like *Darklands* all the more worth savoring, like a good witch's brew on All-Hallows' Eve. □

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SPORTS PAGE

YOU CALL IT

*How do you spell victory?
T-E-A-M-W-O-R-K.*

By Wayne Kawamoto

Take a bunch of talented athletes and throw them onto a field, and what do you have? Until you get them to work together like ants taking over a picnic, you don't have a team. *Teamwork* is the key to success, whether you play sports for real or on your computer.

Most major sports games let you call the plays. If you don't want to play it by the book — in other words, use the game designer's preset plays — you can even write your own.

"BRONCO OVER LEFT ON TWO!"

For both calling set plays and creating your own, football games are by far the most comprehensive. Every PC football game gives you a large number of set plays to choose from. Konami's *NFL* includes 56 plays, *Accolade's Mike Ditka Ultimate Football* offers 132, *Dynamix's Front Page Sports: Football* has 200, and *Electronic Arts' John Madden Football II* features 81.

When you're ready to out-Madden Madden and kick Ditka's butt, though, it's time to write your own

plays. Play creation and capabilities differ from program to program, but most games feature some variation of those old chalkboards with their Xs and Os.

Pass patterns, running plays, handoffs, and reverses are all at your fingertips. A masterful blocking strategy could get your tailback home alone in the end zone, just like that bratty kid in the movies.

PROGRAM FOR SUCCESS

Konami's *NFL* uses a quick, step-by-step process. Select offense versus defense, formation, run versus pass — the list goes on. It's much like a programming flowchart, and it's the simplest approach for novices.

But although *NFL* is the easiest digital football game to use, you still have some 72 variables that add up to thousands of combinations.

Games like *John Madden Football II* add more flexibility and control. You tell the players what to do and actually draw the paths for them to follow.

Madden also lets you "walk" through the play, and try it out against different defenses.

AT THE SNAP

You'll find the most comprehensive play creator, though, in *Dynamix's Front*

Page Sports: Football. As in *Madden Football*, you can designate patterns and assign logic to the players, but *Front Page* also includes instructions for before the snap and after.

You can put players in motion, as well as control the rush, look for the pass, block, or key in on specific players. For football play creation, *Front Page* takes the prize.

BATTING 1000

Of course, all team sports have set plays. Any athlete will tell you that teamwork is everything — whether you've got 11 guys on the gridiron, nine on the diamond, or five on the court.

Baseball doesn't have the same kind of plays football does, but managers constantly signal their intentions, and players work together.

MicroLeague Baseball IV, for example, a statistics-based game, ignores the standard arcade aspects of computer play and lets you create up to 200 plays in the "sign book."

Because you control the entire game by keying in plays and intentions, the sign book fits right into the game. And by combining several commands into one, you can create complex plays.

For example, you can tell the batter what to do (bunt or hit aggressively)

while instructing the baserunners (steal).

On defense you can set the outfield (shallow, deep, pull) and clue the pitcher how to throw (normal, aggressive, or pitchout).

FULL-COURT PRESS

Basketball also uses plays, but compared with baseball and football it remains the most arcade-like.

In PC games such as *Bethesda's NCAA Road to the Final Four*, you can call offensive plays (pick and roll, give and go, backdoor) and defenses (man to man and zones).

The aging and less-sophisticated *Electronic Arts Lakers vs. Celtics* sacrifices strategy for arcade action. Even *Electronic Arts' latest Jordan In-Flight* and *Team USA* don't let you create plays, so for now, basketball fans will have to settle for the designer's default plays.

Basketball gamers would have a blast with such creative capability (any game designers listening?), but for now, PC hoops coaches will have to ride the pines.

PULLING TOGETHER

As sports games get more sophisticated, the strategic aspects of play are going to continue to improve. In the future, teamwork on that digital field of dreams is certain to become more important than ever. □

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YOU ARE THERE

DESPERATELY SEEKING VALHALLA

*Don't touch that RPG!
The history might just
rub right off.*

By Peter Dalfson

Computer-game categories are an incestuous lot — they're always getting tangled up with each other in the MixMaster of design.

For instance, we have flight simulation/strategy/war games, adventure/card games, role-playing/arcade games — even some strategy game/databases. Is there anything some game programmer somewhere *hasn't* tried?

I'M A VIKING — GOTTA LOVE ME

Some types, of course, just haven't gotten along. Historical material, for example, is typically the stuff only of war and strategy games. (Can your Duke of Wellington change France's Nappies ahead of schedule?)

Role-playing-game designers, on the other hand, are content to invent their own history and legends out of whole cloth. Rarely do the twin meet.

The last few months, though, have witnessed the arrival of an interesting hybrid — the historical role-player rooted in Norse

mythology — with games like **Heimdall** (Virgin), **Dusk of the Gods** (Interstel), and **Ragnarok** (Norse-helm Productions). And, of course, there's **Darklands** (MicroProse), set in not-too-distant medieval Germany.

Let's not debate the issue of how these Viking games trotted out in such close formation. For all I know, the guys in horned hats could be this year's version of dinosaurs. And the period certainly is fertile ground for games.

Norse mythology is full of stories to tell, missing objects to recover, and rivalries to exploit.

To boot, the Viking lifestyle has a coarse edge that comes off well on the computer screen, and it's a grand excuse for lots of fighting. When life is a dungeon, who needs dungeons?

But it's not that simple. History isn't some cafeteria scoop of mashed potatoes to be plopped down next to the meatloaf. There's the matter of how to use it best. As background? As theme? As substance? As a spiffy intro to the manual?

ADRIFF IN DEUTSCHLAND

The first approach — history as context — is potentially the most rewarding. After all, a game based on real life should ideally resemble real life in its workings. That's what happens in **Darklands**.

It's an open, flexible world rather than a closed, deterministic string of events. The game just clears out of the way.

The era and settings are anchors — a set of general rules and expectations — and you're free to drift as you like within its wide radius, questing or resting or just investigating as you please.

Notice I didn't go into detail about the game's vision of greater Germany. I didn't want to push it on you, because **Darklands** doesn't.

It's just there — a quiet reference point in the background — and with time it becomes as natural as 1993 is in the rest of your life.

THINLY DISGUISED

For some of these games, though, the historical angle seems like just a hip, ready-made theme that could be easily slapped on or peeled off.

Sure, the cartoony star of the isometric **Heimdall** wanders through the island ranges of Midgard, Utgard, and Asgard in search of three god-owned weapons, but there's nothing much to distinguish that from wandering through, say, the Norse law firm of Dewey, Suem, & How, except that this one has booty traps instead of receptionists.

Don't get me wrong. The game is fun — larger than

life with its big animation, plus one of the most enjoyable stats-rolling schemes you'll ever see — but it uses Norse legend almost incidentally.

And sure, **Ragnarok** has quests for Thor's hammer and Odin's spear (among others), but in its heart of hearts, it's a sharp-looking, mouse-driven Norse spin on nitre-encrusted standbys like **Rogue**, **Hack**, **Larn**, **Moria**, and **Omega**. Nothing wrong with that either, of course — if you like those games, this is the slickest yet — but the historical stuff could come off with the first hard rain.

GODS AND HEROES

Dusk of the Gods runs in the other direction. This precursor to **The Summoning** (SSI) — the two titles share the same game system — is a regular library of Norse mythology. You can't get out the door of Idavoll (where the game begins) without an earful.

I don't doubt that **Dusk of the Gods** could educate while it entertains — and it does entertain a good deal — but it also leaves me feeling overwhelmed by the sheer volume of information. Hey, I just wanted to get directions to the men's room, not your life story, pal.

Oops — now I've done it. Yet another genre: the educational/historical role-playing game. □



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CHILD'S PLAY

BLACK HOLE

Older kids get the short end of the software stick.

By Gregg Keizer

Little kids are cute, lovable, easily distracted—and they've got a lock on educational games.

There are plenty of program titles on the shelves targeted at preschool and elementary-aged children, but not long after kids leave fifth or sixth grade, the software supply starts to dry up. What was once a relative tide of titles becomes a trickle.

What makes this situation so distressing—and frustrating for parents—is that just as a child becomes comfortable with the PC, just as he or she has the patience to explore more-complex software, the software disappears.

BLAME ENOUGH TO GO AROUND

Maybe it's because we're much more likely to open the checkbook for the new kid in the house. Maybe it's because we push basic skills, hoping it will give our children an edge later in life. Maybe it's just because creating less-complicated games for younger kids is easier for publishers. There's enough blame to spread around.

Older kids, most of them anyway, don't need computer software that builds basic skills. Instead, they need solid software tools and enriching educational experiences.

The first bunch are easy to find, for they're pretty much the same sorts of programs the business community needs, such as word processors and digital reference titles.

CD-ROM on the PC may yet manage to fill the second set. With its huge storage space and its ability to integrate video, audio, and text, CDs could simulate the Civil War or the Lewis and Clark expedition; mimic a physics laboratory, complete with particle accelerator; and demonstrate art and literature retrospectives that not only offer galleries and libraries, but put top-notch teachers on screen, too.

THE CD POTENTIAL

Few compact discs even come close to that dream, but some multimedia software does demonstrate the medium's exciting possibilities for educational enhancement.

A perfect example is **The Animals**, a compact disc from Software Toolworks. Created in conjunction with the San Diego Zoo, this CD serves as an electronic animal park.

With hundreds of static images, more than two

hours of audio, a bit of video, and hundreds of pages of text, **The Animals** effectively gives older children a solid lesson in zoology. It's richer, deeper, and more colorful than any middle-school textbook.

LIVE FOR THE MOMENT

But you don't have to wait for CD-ROM's renaissance—which will eventually put a wealth of such software for older kids at their disposal. A few floppy-based titles, too, are indispensable home-learning environments for middle- and high-school-aged kids.

SimLife is one. Though this newest addition to Maxis' "Sim" line showed up first on the Macintosh, it should be out for the PC by the time you read this. It's a must-have if you have older kids who are intrigued by science.

This simulation lets kids mess with genetics and evolution and turns them into digital Darwins. They either start from scratch—building a world à la **SimEarth**—or play with one of the six ready-made situations included with the program.

Almost everything in this world—from the length of its days to how often its plants and animals reproduce—can be changed. You manipulate the environment with **SimLife's** tools, which appear in a seemingly endless array of

dialog boxes and menus. (If there's any one thing that may make **SimLife** too tough for kids, it's the sometimes-confusing way it works.)

SCIENCE BASICS

SimLife isn't the only educational game aimed at older kids, of course. Dynamix's science series—the first release has the catchy title **Quarky and Quaysoo's Turbo Science**—is also worth watching.

Targeted at middle-school kids—grades 6, 7, and 8—**Turbo Science** uses a busy interface, animated cartoon characters, competition, and a terrific manual to teach some science basics.

Dynamix is also planning upcoming games covering topics such as natural, physical, earth, and space science.

LOOKING AHEAD

But the software selection is still way too skimpy. Game publishers who follow demographic trends already know that the Baby Boomers' babies are growing up fast. They'll have to create more and better packages for older kids or risk running out of customers.

If they're smart, they'll get on it today, not tomorrow, and fill that black hole with a pile of software for kids who don't color with crayons anymore. □



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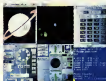
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PERIPHERAL VISION

BATTLE OF THE BULGE

Solve the byte crunch with a parallel-port hard-disk drive.

By Barry Brenesal

When you bought that 80-megabyte hard-disk drive a couple of years ago, you probably thought you were set for life. I know I certainly did.

We were both wrong.

BIGGER AND BETTER?

PC programs, especially games, have ballooned dramatically in size in recent months. Many games think nothing of hogging 10 to 20 megabytes of space on your drive, and some titles, such as Origin Systems' *Ultima VII* and MicroProse's *Darklands*, homestead even more than that.

You can sum up the reasons behind this Battle of the Computer-Game Bulge in two words — *VGA* and *animation*.

By virtue of higher resolution and a larger number of colors, a *VGA* graphics file is simply much larger than the same image in *EGA*.

And then the problem's compounded when static *VGA* images give way to the multitude of pictures

necessary to simulate the movement of characters and objects on screen.

Think about that the next time you fly the unfriendly skies in Dynamix's *Red Baron*, or take a step in *Ultima's* dread *Abyss*.

Still, you don't have to chuck your hard drive and start all over to beef up your storage space.

There are ways to supplement your current disk drive, rather than replace it: high-density floppies, Bernoulli drives, hard-disk cards, magneto-optical drives.

All of these options, however, have significant drawbacks or take up some of your computer's precious resources — internal slots and external ports.

One solution that's almost penalty free and resource-transparent is a *parallel-port drive*.

Though it does connect via a port, seemingly contradicting my admonition not to eat up any PC slots or ports, it puts an open port on the back of the drive. One used, one created: It's a draw.

Parallel-port drives have other advantages, as well.

First, they're portable in the best sense of the word, and almost the ultimate in data security: You can remove a parallel-port drive easily and lock it up after hours.

Second, they're also simple to install and don't

demand that you crack the case of the PC.

Third, cost is reasonable — typically within the \$400 to \$1200 range in list price, significantly less on the street.

Fourth, parallel-port drives come in a range of size options, tailored to your storage needs — capacity stretches from 40 megabytes all the way up to 240 megabytes.

Fifth, most parallel-port drives are both small and light — no longer than 8 inches or no heavier than 3 or 4 pounds.

Best of all, you have several excellent devices to pick from.

DECISIONS, DECISIONS

Liberty Systems' model **50 120MB-QP** (408-983-1127), for instance, is a capable performer that also provides an additional port for another SCSI (*small-computer-systems interface*) device. As a result, you potentially gain a port when you buy a Liberty.

HDI's **Rodeo Drive Model 960** (800-488-0001), on the other hand, has the advantage of the company's solid customer-support base, very low price (\$489 list for 60 megabytes), and an enclosed battery pack that delivers two hours of uninterrupted power.

The only drawback to parallel-port hard drives is their relatively slow data-transfer rate, an inherent

problem because they're juicing information via the slower parallel-port interface. Most units perform competently at 20 to 30 milliseconds — Liberty definitely on the slow — while internal hard drives typically reach rates of 12 to 20 milliseconds.

The single exception thus far is Micro Solutions' **Backpack** (815-756-3411), which nearly duplicates the access time of a standard internal hard drive.

I've used a Backpack, and I've seen it perform regularly in the 16- to 18-millisecond range when it's working with a software disk cache. The bottom line is that there's no perceptible delay.

There is this about the Backpack, though: To conserve power, the drive-platter motor shuts down after 30 inactive seconds. It restarts automatically as soon as the drive's called on to access data, something that takes about five seconds.

It's noticeable really only when you first load a program, since most games either access hard drives relentlessly (*Ultima VII*) or hardly at all (*Nobunaga's Ambition II*).

Want to keep buying bigger and better games? If you're serious about entertainment, a good parallel-port drive can make all the difference. □

It's one thing to be shot down in the middle of a game, but without adequate memory you'll never get off the ground.



Insufficient Memory

To get today's hottest computer games up and running, your computer needs increasingly vast amounts of conventional memory – the first 640K of memory found on nearly every PC-compatible system. The same memory your mouse, CD-ROM and other peripherals compete for, as well.

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it's by far the best flight insurance money can buy.



© 1993 Qualitas. Qualitas, 7101 Wisconsin Avenue, Suite 1386, Bethesda, MD 20814. All company and product names are trademarks or registered trademarks of their respective owners. System Requirements: Any 386, 386SX, 486 or 486SX PC or PS/2, min. 256K of extended memory, DOS 3.0 or higher, and hard disk drive. (386MAX also supports 386 machines with Shadow RAM, or any PC with EMS 4.0 hardware with 256K memory. Feature availability and memory recovery may vary on these systems.)

NOW HEAR THIS!

Plug in an audio board and let dazzling music, realistic sound effects, and crisp dialogue blow you away.

By TOM CARLTON



IF BLASTING YOUR RETINAS WITH MEGAVOLT rays from the monitor just isn't enough anymore, if your tympanic membranes have survived decades of the Grateful Dead and you keep comin' back to the front of the stage, it's time to live life to the fullest. Are we talking bungee jumping? Nope — try multisensory computing.

Until virtual reality offers a total-body experience, though, the most you can expect from your PC right now is an assault on just two sense organs — your eyes and ears (and if you overdose on either, a minor attack on the pain receptors, as well). For now, let's focus on the sound of PC gaming. Music, sound effects, and dialogue are the elements that enhance your games most easily — and most dramatically. Digital soundtracks do for computer games what MTV did for television programming — add significant entertainment value. Without the push from MTV, we'd never have seen music inte-

grated into programs such as *Miami Vice* — a blend of drama and music video. Without better sound, computer games remain in the entertainment ghetto, as well. A game without sound is like food without flavor: You get satisfaction, but something's missing.

A number of factors come into play as you determine your sound needs. Money, needless to say, is usually critical. That's why we'll examine four sound boards that, though sensational, don't put your credit card over the limit. All retail for less than \$350. Each of these boards — AdLib Multimedia's **AdLib Gold 1000**, Creative Labs' **SoundBlaster Pro 2.0**, and MediaVision's **ProAudio Spectrum 16** and **ThunderBoard for Windows** — truly enhances your desktop environment. But which one's best for you? That depends. Take a look at the accompanying **Table** for a comparison of major features. Then pore over the sections below that describe each board's ease of use, compatibility, flexibility, and response when



Left to right: AdLib Gold 1000, ThunderBoard for Windows, SoundBlaster Pro 2.0, ProAudio Spectrum 16.

SOUNDS LIKE THIS

ADC/DAC. Audio-to-digital converter/digital-to-audio converter. Chips that turn sound frequencies into digital information and vice versa.

ADPCM. Adaptive differential pulse-code modulation. Decompression algorithm using PCM-formatted data, but adding compression. Compression ratio of 3:1 converts 12 bits to 4 bits.

AGC. Automatic gain control. Allows recording with minimal distortion.

Decibel. Numerical expression of the loudness of sound.

Digital audio. Recorded sounds such as speech and sound effects played back by DAC chip.

DMA. Direct memory access. Speeds up I/O events by giving peripherals access to computer memory without CPU intervention. These controllers are special memory-handling chips that relieve the CPU of the task of moving data bits to memory addresses. Most programs use only one channel at a time, but backup programs may use one for reading the hard drive and another to write to a floppy. Programs with audio can use a separate DMA channel for each audio channel.

Dynamic filtering. Reduces electronic emissions from PC and thus noise in sound-board output.

Interrupt. Instruction telling microprocessor to stop what it's doing and call a specified routine. When it finishes the operation, it resumes the original process. Interrupts can be initiated by hardware or software.

IRQ. Hardware interrupt-request channels, typically IRQ 0 through 15, with IRQ 0 given highest priority. Sound boards should offer at least two IRQs.

MIDI. Musical-instrument digital interface. Standardized serial interface allowing various synthesizers to communicate with each other.

PCM. Pulse-code modulation. Straightforward conversion of waveforms to bits, and digital information back to sound waves.

Redbook audio. 16-bit digitized format called CD-audio, with stereo sampling rate of 44.1KHz.

Synthesizer. FM sounds (voices) synthesizing music, speech, sound effects. The greater the number of voices, the greater the number of possible sounds.

you put the "rubber to the road." When the technobabble gets you down, check out our "Sounds Like This" sidebar for a small assist in terminology. But first, let's talk basics.

BASICALLY SOUND

Sounds are longitudinal air waves produced by the vibrations of physical objects, such as your vocal cords, a violin's string as it's plucked, or a jet engine revving up. They're measured in terms of *frequency* (pitch) and *amplitude* (loudness); the human ear normally can hear sounds whose frequencies range from 16 to 20,000 hertz (cycles per second). Another qualitative characteristic is *timbre*, which results from overtones or harmonics super-positioned on the fundamental pitch of a note.

So sound boards take on a tough task as they try to use digital form to reproduce sound. To achieve this, the device must transform the analog sound (waves), typically by using digital-to-analog converters (DAC) and analog-to-digital converters (ADC). This requires a sampling of the sound waves at a rate sufficient to fool our ears and keep us satisfied — kind of like a newspaper photograph or laser-printed page made up of enough dots to trick the eye. The more dots, or the greater the rate of sampling, the greater the degree of fidelity to the original. One common form of sampling is *pulse-code modulation* (PCM); adding compression, it's called *adaptive differential PCM* (ADPCM). Certain filters enhance this process by reducing undesirable digital effects.

Another technology bundled with sound boards is FM (*frequency modulation*) synthesis of stereophonic and monophonic sounds. An FM synthesizer chip produces complex musical waveforms without putting a strain on the computer's processor. Most boards use an inexpensive but effective Yamaha chip containing preprogrammed counters and waveforms used to generate sounds such as drums and strings — timbre, as well as melody and rhythm voices. It's also responsible for the playback of MIDI (*musical-instrument digital interface*) files. The more voices (instruments or notes) played simultaneously, the better. The operative word, however, remains *synthesizer*. These sounds aren't actual recordings, but computer-created sounds.

Digitized sounds are data intensive. That's why you'll hear limited sound on floppy-disk-based products and greatly enhanced soundtracks on compact disc. Just as importantly, most sound boards process compact discs' *Redbook audio*, giving you the stereo quality you expect when listening to audio CDs.

These boards depend on two other factors as well: speakers as good as or better than the sound board, and software with soundtracks able to challenge both the board and the speakers. Regardless of their specifications, sound boards are only one part of your sound system. Connecting those speakers to a PC sound board is very easy — all

audio cards include a mini-phono plug port, into which you simply insert the speaker or headphone jack. (In fact, headphones are perhaps the best way to enjoy PC sound, because they not only offer high fidelity at a low price, but ensure privacy when you don't want the family to know you're playing games instead of working hard on home finances.)

Having listened to this background noise, let's turn an ear to each board. Three boards — the AdLib Gold 1000, the SoundBlaster Pro 2.0, and the ProAudio Spectrum 16 — fall within the price and performance midrange, while the ThunderBoard is a good performer at a bargain price. Let's have a listen.

GO FOR THE GOLD

The AdLib Gold 1000 is a multimedia audio board offering a unique open architecture for easy sound expansion. A number of hardware options are available, including telephone answering and voice mail, a SCSI interface for CD-ROM drives, and a daughter card for something AdLib calls *Surround Sound*.

This 8-bit board combines digital-audio record and playback, joystick control, MIDI, and music synthesis with a high level of quality. The Gold 1000's audio capabilities include two independent channels, which let the card play stereo or speech on one track and monophonic music on the other. Like the ProAudio Spectrum 16 and the SoundBlaster Pro 2.0 (version 2), it uses the Yamaha YMF262 synthesizer chip. This improved chip permits the Gold card to direct a single voice to the left, right, or center, whereas the YMF3812 (found in the original SoundBlaster Pro and the ProAudio Spectrum 8) must call two voices to direct a sound to the center. The Gold card reduces crackling, hissing, and popping sounds at lower frequencies by using three separate filters for anti-aliasing, double oversampling, and double undersampling.

Unfortunately, the collection of five memory-resident device drivers that come with the AdLib Gold require a mind-boggling 200K of memory. I fiddled for hours trying to load them into high memory under DOS 5.0, but had no luck. When I tested a Knowledge Adventure multimedia game that offered AdLib Gold compatibility, it wouldn't work without loading two of these drivers first; only after a long-distance call to technical support did I discover this. It became apparent that Knowledge Adventure doesn't incorporate all the needed drivers in its programs. If other publishers take such a cavalier attitude, the AdLib Gold will require some degree of determination and tenacity on your part to make it work. A session with LucasArts' *Monkey Island II* (which didn't demand additional drivers) sounded great and played without a hitch, as did several Sierra games.

Once you load appropriate drivers, AdLib offers several utilities: *Juke Box Gold* plays music created by the Visual

Computer Gold music-composition program (sold separately); *Voice Pad* lets you digitize sounds through a microphone and play them back using a timer; *Soundtrack Synchronization Editor* lets you combine graphics images (PIC, PCX, GIF, TIF, and BMP formats, among others) with sound files, and works with the included *Autodesk Animator Playback* utility.

Rounding out this board's features, AdLib offers drivers for Windows 3.1. In today's world, ignoring Windows shuts doors. While the drivers performed as well as those included with the other boards tested, don't look for any added Windows sound utilities.

Although AdLib almost went out of business several months ago, it mustered the resources to continue. With competition heating up, it lost a lot of market share, making its biggest drawback — lack of support — even bigger. To ensure your investment in this card, game developers must continue to support the board. That's not guaranteed.

When you compare the AdLib Gold's specifications and sound quality with those of the SoundBlaster Pro 2.0 and the ProAudio Spectrum 16, you'll be hard pressed to tell them apart; only the bundled software seems to distinguish them. The Gold card stands shoulder to shoulder with its peers.

SPECTRUM ANALYSIS

The ProAudio Spectrum 16 is one of the best all-around, affordable multimedia sound boards. It works equally well in DOS or Windows, and connects internally or externally to a CD-ROM drive. It's a real improvement over the original 8-bit card: This one sports 16-bit DAC/ADC resolution, offering real 16-bit 44-kilohertz stereo sound. The new 20-voice Yamaha YMF262 single FM synthesizer makes this true stereo possible. In addition, the board uses shielded circuitry and dynamic filtering for low noise level and clear sound. And because it's SoundBlaster compatible, your current game collection is secure. What's the bottom line? The ProAudio Spectrum 16 has good specs for recording and playing both digitized and synthesized sound.

Along with the basics, you get an on-board analog stereo mixer and a 4-watt-per-channel amplifier capable of pushing 4- or 8-ohm speakers. Audio mixing includes internal synthesizer, digital audio, CD-audio, external line-in, and a microphone. Also included is a full-duplex MIDI port for recording and playing at the same time. (This feature requires the optional **MIDI Mate** software package.)

The ProAudio Spectrum 16 is the only board reviewed here that comes with a "standard" SCSI interface, which lets it accept most of the popular CD-ROM drives. If you already have a drive, it'll probably work with this card (although the drive may not meet MPC requirements). Check with MediaVision to make sure the card supports your drive.

The ProAudio's also ready for Windows 3.1. Windows drivers (dynamic linked libraries, or DLLs) are supplied, and MediaVision even adds a few Windows "applets" (small applications) for mixing, equalizing, and timed fades. The ProAudio Spectrum 16 doesn't have any trouble playing any sound within Windows, whether it's coming from the hard-disk drive or the CD-ROM.

But let's not forget about good old DOS multimedia. MediaVision bundles gobs of audio utilities with the card, including *Stereo Studio F/X* for waveform sound editing, *SP Spectrum* for MIDI sequencing, *TrakBlaster Pro* for four-track studio sound and graphics mixing, *Pro Speech* for text-to-speech

synthesis, *Audio Mate* for adding sound to DOS files, and a few other goodies.

Granted, the ProAudio's loaded with features, but do you have to be a NASA scientist to install it? If you're not afraid of opening the PC case, and you normally break only one glass a week, you can probably do it. This installation is easier than the original ProAudio Spectrum's owing to several new software tools for determining potential DMA (direct memory access) and I/O (input/output) conflicts, and for changing settings with software switches. It's very nice indeed.

If you're an avid PC gamer, one vexing sound problem you'll encounter is that running a DOS title from

FEATURES	AOLIB GOLD 1000	PROAUDIO SPECTRUM 16	SOUND BLASTER PRO 2.0	THUNDERBOARD FOR WINDOWS
DIGITIZER				
sampling DAC resolution	12 bits	8 bits	8 bits	not stated
sampling rates 8-bit ADC	5 to 44KHz	4 to 44KHz	4 to 44KHz	4 to 22KHz
sampling dynamic range	72dB	90dB	48dB	not stated
hardware compression	3:1	2:1	ns	2:1
hardware decompression	3:1	2:1/3:1/4:1	2:1/3:1/4:1	2:1/3:1/4:1
SYNTHESIZER				
stereo synthesizer	1 stereo YMF262 OPL3 20 FM voices	1 stereo YMF262 OPL3 20 FM voices	1 stereo YMF262 OPL3 20 FM voices	no stereo 11 FM voices
FM DAC resolution	16 bits	16 bits	16 bits	8 bits
FM sound dynamic range	95dB	90dB	95dB	not stated
four-operator FM synthesis	yes	yes	yes	no
MIXER				
power amplification 4-ohm speaker	1.2W RMS 8 ohms	4W/channel	4W/channel	2W/channel
CD-audio Redbook	yes	yes	yes	no
MIDI				
MIDI interface in/out/thru	yes	yes	yes	no
simultaneous MIDI in/out	yes	yes	no	no
FIFO buffer	2 x 128 bytes	yes	64 bytes	no
FEATURES				
microphone input w/ AGC	yes	yes	yes	yes
AdLib compatibility	yes	yes	yes	yes
SoundBlaster compatibility	no	yes	yes	yes
Windows 3.1 compatibility	yes	yes	yes	yes
standard joystick port	yes	yes	yes	yes
CD-ROM drive support	standard SCSI optional kit	standard SCSI	Matsushita only	no
selectable IRQ/DMA I/O address selection	programmable DMA/IRQ	programmable DMA 0 to 3/5 to 7	jumper IRQ 2/5/7/10 DMA 0/1/3 IRQ 2 to 7/10 to 15	jumper IRQ 2/3/5/7 DMA 1
options	Surround Sound \$89.95	MIDI Mate	CD-ROM kit \$39.95 phone answering system CD-ROM adapter kit \$79.95	no
warranty	1 year limited	3 years limited	1 year limited	3 years limited
suggested retail price	\$299.95	\$349	\$299.95	\$179

Table. Comparing features among four popular sound cards.



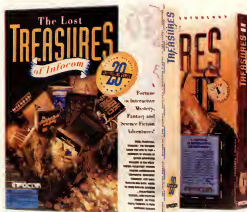
Once you've defeated alien armies,
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Windows often results in silence. The only solution is to leave Windows and run at the DOS prompt. The MediaVision technical-support staff says the ProAudio Spectrum 16 isn't capable of running a DOS game under Windows, yet The Learning Company's DOS-based *Treasure Cove* and *Treasure Math Storm* do run from Windows (complete with sound) if you're using this card. That's confusing, to say the least.

Once installed, you won't be disappointed with the results of the ProAudio Spectrum 16. Although the card's 4-watt-per-channel output is adequate for small speakers, putting sound through a large amplifier and stereo speakers will blow your mind. Whether you're playing King's Quest V, Carmen Sandiego, Monkey Island, or Loom, this board sounds great.

FULL BLAST

When most PC users think of sound boards, they think SoundBlaster. Creative Labs' new SoundBlaster Pro 2.0, with its 20 FM voices coming from the single Yamaha YMF262 synthesizer, maintains the line's reputation and keeps pace with the newest kids on the block.

The system includes a MIDI controller interface, joystick or game port, and sound-capture and playback functions. The half-length SoundBlaster card plugs easily into any 16-bit expansion slot, but the non-standard SCSI interface works only with a Matsushita CR-521 CD-ROM drive, or certain Panasonic drives available from Creative Labs.

Installing the SoundBlaster seems effortless, although you set I/O, IRQ, and DMA with hardware jumpers found on the board. That's no problem, as the documentation delivers clear instructions, but the ProAudio and AdLib Gold software switches allow changes without opening the PC and pulling cards. Software switches are best, hands down.

Along with all necessary DOS and Windows 3.1 drivers, the SoundBlaster Pro 2.0 comes with eight DOS sound utilities. *Voice Editor II*, for instance, records, compresses, and edits voice files of unlimited size. One memory-resident program, *SBTALKER*, is a text-to-speech synthesizer, while another, *SBSIM*, provides a standard interface module for loading and unloading sound drivers. The latter appears more convenient and more versatile than AdLib's driver management. Two MIDI programs (a serious MIDI sequencer and *SBMIDI* for playing MIDI and CMF files) offer some extensive features for amateur musicians.

Other SoundBlaster utilities include *CD Music Player*, *FM Intelligent Organ*, and *MMPlay*, for integrating animation and sound. It's a bevy of beauties.

Creative Labs includes a **MIDI Kit** with the sound card, as well. Along with an adapter cable for your joystick and MIDI in and out lines, you get *Sequencer Plus*, a

powerful recording and editing program from Voyetra Technologies. When compared with the ProAudio Spectrum 16 or the ThunderBoard, the SoundBlaster Pro 2.0 seems short on Windows add-in utilities, although if you're musically inclined, the MIDI extras can make up for it.

Keep in mind that the SoundBlaster Pro 1 has only two-operator FM synthesis, while the Pro 2 has four-operator, for richer, stronger, deeper sound. When purchasing a SoundBlaster Pro board, the box may not indicate its version number. Make sure you're buying the 2.0 version before you part with your money. Although it lacks CD-ROM flexibility, the Pro 2.0 offers everything you expect from a board in its price range.

THUNDERSTRUCK

While the ThunderBoard holds no technological edge on its big brothers, the price is right and its sound quality is respectable. If you don't plan on using a CD-ROM drive and don't demand stereo, the ThunderBoard is hard to beat. This 8-bit, 22-kiloherertz monophonic board produces high-fidelity sound, is compatible with the SoundBlaster, the AdLib card, and Windows 3.1, and comes bundled with a fistful of utilities.

The animated, talking calendar from *At Your Service*, for example, is particularly delightful: Jeeves, the gray-templed talking butler, adds humor to your appointments, phone calls, and meetings. *Monologue for Windows* offers text-to-speech synthesis, and *Lotus Sound* lets you record and play back sound files embedded and linked to your Windows applications. You also get a MIDI sequencer, a "pocket" recorder, and a waveform editor — a real bundle of goodies.

Installation is almost plug and go — no memory-resident, memory-hogging drivers, no messy installation — just about as simple as it gets. The board does rely on hardware toggle switches, however, for IRQ, joystick, and I/O address settings. You're stuck with the single DMA 1 channel, although that's not usually a problem. On a basic system, I checked the default settings and installed the board without a hitch. It's ready for most DOS games. Installing the DOS utilities and Window 3.1 drivers is also a snap. If you play in DOS and Windows, the ThunderBoard for Windows is the card to beat when price is everything.

SOUND ADVICE

Installing any of these boards is straightforward if your current configuration is uncomplicated. If configuration conflicts arise during installation, the ProAudio Spectrum 16's friendly diagnostics and software switches easily beat the other boards' tiresome requirement of pulling cards and moving jumper pins. None of the boards is a problem if you understand a few basics, or have the patience and tenacity to read some good

**NOW
HEAR THIS**

documentation and perhaps call technical support for help. (If you call MediaVision, you'll undoubtedly wait a day or two for someone to call you back; AdLib appears to be waiting for your calls; and Creative Labs usually manages same-day support.)

It's clear that the three stereophonic boards offer sound reproduction beyond a monophonic card such as the ThunderBoard. But you'll probably find it difficult to differentiate among the ProAudio Spectrum 16, the SoundBlaster Pro 2.0, and the AdLib Gold. Audiophiles may be able to distinguish subtle differences, but when you select a game from your library and fire it up, you'll find that all three boards perform equally well. It sounds as though this class is plenty good enough for the non-professional musical ear.

Constellation of features, bundled software, ability to upgrade, CD-ROM compatibility, and cost will determine which board's for you. Street prices vary considerably, so shop around. One choice, of course, is perfectly clear: Adding an audio board is the soundest investment you'll ever make in your system — not owning one isn't. □

PRODUCT INFORMATION

AdLib Gold 1000

AdLib Multimedia
220 Grande-Allé East
Suite 850
Quebec City
Quebec Q1R2J1, Canada
(418) 529-9676
(800) 463-2686
\$299.95

640K IBM PC or compatible
2MB for Windows
DOS 3.0 or later

ProAudio Spectrum 16

MediaVision
3185 Laurelview Court
Fremont, CA 94538
(510) 770-8600
(800) 845-5870
\$349

640K IBM PC or compatible
2MB for Windows
DOS 3.0 or later

SoundBlaster Pro 2.0

Creative Labs
1901 McCarthy Blvd.
Milpitas, CA 95035
(408) 428-6600
\$299.95
512K IBM PC or compatible
DOS 3.0 or later

ThunderBoard for Windows

MediaVision
3185 Laurelview Court
Fremont, CA 94538
(510) 770-8600
(800) 845-5870
\$179
640K IBM PC or compatible
2MB for Windows
DOS 3.0 or later

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Illustration by Randy Hamblin

MEN

WANTED: Able-bodied men 1mm tall. No experience necessary. Work is dangerous, death imminent. Must be able to carry out orders with a minimum of joystick supervision and work gamer's hours (10 p.m. to 4 a.m.). Attitude helpful. Inquire at CPU.

There be tiny men living in your computer, and they've got tiny axes to grind. They're the little people who do the dirty work as you go about your maniacal quest for power and fame. So go ahead and say it — say *I'm omnipotent, omnipresent. Say I'm the boss, I'm in charge.* Then just take over the known (and small) world inside your PC.

In PC war games such as Electronic Arts' *PowerMonger*, MindCraft's *Siege*, Virgin's *Realms*, UbiSoft's *Mega Lo Mania*, and Interplay's *Castles II*, these tiny people form tiny armies to obey your every command. On the PC battlefield they'll fight their little hearts out for you.

Off the battlefield you can imagine that these short people lead their own lives, walking the streets of small towns, drinking

champagne with tiny bubbles, riding on miniature horses, watching reruns of *Little Rascals*, shopping in mini-malls, studying micro-economics, and listening to music by Tiny Tim and Randy Newman. When they fill out their taxes, they must use — what else — the short form.

ME AND MY ARROW

But why tiny men? Games such as Maxis' *SimCity*, for instance, do fine without them by demonstrating your decisions with cars in congested traffic, commuter trains transporting passengers, and buildings and houses going up every which way. You provide your "sims" with jobs and raise their taxes, but you never actually see them. *SimCity* features a metropolis devoid of people. They're heard, but never seen.



By WAYNE KAWAMOTO



PowerMonger's 3-D landscape teems with activity. Create a new world in miniature, complete with a round of daily activities — everything from tending sheep to waging war.



Step back in time and into a land of elves, wizards, and archers. Siege's detailed graphics images perfect the art of castle warfare.

In war games such as *Patton Strikes Back*, your armies are arrows that show movement, direction, and status. Seeing them turn in hasty retreat may be a bit disheartening, but the battlefield is clean, almost antiseptic. No digitized little guy remains in the war zone, and except for the casualty lists — expressed in numbers, not names — everything is sterile and removed. It's hard to get emotionally involved with an arrow. (And if you did, would you tell your friends?)

But take a look at the tiny, animated folk in a game like *Siege*. You actually see your men carrying out your orders, then duking it out. After battle, you view the scene and see their tiny bodies strewn across the landscape. They've paid the ultimate digitized sacrifice just so that you can claim victory and rule your puny PC world.

All five war games featured here are more fantasy than reality — no tiny G.I.s or Germans yet. They may differ in execution and presentation, even in the broader contexts of strategy and plot. But they all transform you from mild-mannered citizen into omnipotent lord. If it's power you want, these tiny-men games are perfect.

ABSOLUTE POWER

If absolute power corrupts absolutely, absolute PowerMongering corrupts unequivocally. This is one of those "play me" games that's hard to

put down. In *PowerMonger*, the ultimate goal is to use a combination of force and diplomacy to conquer 195 territories. Your instrument is an army of tiny men.

After your kingdom is destroyed by a catastrophic volcano, you find yourself adrift at sea. You and your followers then happen upon a land in which feudal lords wage war continually. To recapture your former glory, you take up arms in the struggle for power.

PowerMonger creates a miniaturized world — complete with changing seasons and weather that ranges from sunny days to pelting rain — with tiny people going about their daily business, literally making mountains out of molehills. You'll see them farming, tending sheep, inventing things, and preparing for battle. And when armies inevitably clash, you'll hear the clang of steel and see little souls ascending to the heavens above, like a scene from Disney's *Fantasia*.



All through Bretagne and Europe, local lords gathered their forces to stake claim



We're not in Camelot anymore: Castles II takes on enemy knights, sniper archers, and even Holy Mother Church.

effectively denuding the land. (A great game has to be politically correct these days.)

You also can share PowerMongering fun over the phone lines. Two people can play by modem, and you can even add computer-operated tribes to the foray. The game's graphics images are well done, too. PowerMonger is a challenging game in which you hold the whole world (and your army of tiny men) in your hands.

MI CASTLE, SU CASTLE

If an orc's home is his castle, you'll need MindCraft's **Siege** to serve an eviction notice. A game of strategy set against the fantasy backdrop of the Magic Candle role-playing system, **Siege** miniaturizes the art of taking and defending castles.

During battle, your tiny soldiers attack and defend; archers send masses of arrows; and your engineers erect ladders to scale walls, build mobile bridges, pour scalding oil on castle attackers, and operate the catapult and ballista. You face orcs, trolls, even fireball-tossing wizards.

You watch the action from an overhead view of the battlefield; you can also zoom out to view the entire area, or magnify a section to see your tiny men fighting it out. To direct your army, just select a group of soldiers with a mouse click, give them the command,

then define the area in which they'll perform their task.

Getting archers to fire, for example, means selecting them, showing them their target, then telling them the location at which they'll stand to shoot. The archers march to that spot automatically and begin firing away, getting their points across.

Siege demands some strategic thought, too. When assailing a fortress, for instance, you can send in the engineers to soften the enemy with the catapults and ballista, then attack with your infantry. If you're defending, you can sneak in command units to take out the catapults while you try to keep the rest of your troops out of range of the barrage.

You win by fending off the attackers for 20 days, or by raising your flag in the castle and keeping it there for a full day. **Siege** features detailed graphics images that show catapults launching boulders and rocks, and close-up views of men in mortal combat. The game's audio effects include chaotic sounds of battle — men screaming, arrows flying, boul-

ders crashing. **Siege** is tremendous fun, and a solid war game besides.

DEITY BASHING

Oh, the gods must be crazy. No Coke bottles falling from the great unknown here, but in **Mega Lo Mania** a new world is about to form. And what does every civilization need? Its own god, of course.

The perks are impressive. Not only do you have jurisdiction over the heavens and oceans, you get life eternal. But for every new planet, there's competition, literally of Olympic proportions, to see who's the most powerful and the worthiest to rule the land. You'll be in a hot contest with three other god wannabes, vying for the divine right.

It's not easy. Each contender controls a group of followers who fight it out for god (you) and apple pie. Starting in the Stone Age (9500 B.C.) and working your way up to the present, you're trying to conquer some 28 islands. You'll begin with sticks and stones and end up lobbing nuclear warheads. That's progress.

In **Mega Lo Mania**, the key to success is putting your tiny workers on the right project. Do you ask your limited number of men to invent new and superior weapons? Or should you form an army, then attack before the enemy has time to invent? Or maybe you should dig for



Sticks and stones to nuclear warheads:
It's a 10,000-year fight for divine rights in **Megalomania**.



Taxation, sickness, commerce, and the glories of war keep
you glued to the screen as you build your empire in **Realms**.

natural resources? One may preclude another — if you attack, for example, you can't invent.

Once you decide to go to war, you must assign men to the army, equip them with weapons, and send them to a targeted sector. Your people, once sedate little miners and inventors, turn into a drooling, kick-ass mob of maniacs, running around like crazy, hurling projectiles at each other until the outcome is decided. Unlike other tiny-men war games, in which you make tactical decisions continually, here you just tell your men to fight and off they go, kamikaze-style.

Even with this lack of control, Mega Lo Mania is a curiously captivating game with a lot of charm. Its strategic aspects are in the planning stages, while the tactical aspects are left to that unruly mob on the field. The game features brightly colored graphics images and some off-the-wall sound effects. If you manage properly, you may just conquer all and wear the title God of the Year with pride. Remember, just take it one century at a time.

SPARTACUS FOR SHORT PEOPLE

Not every epic's on the silver screen, where actors' noses are the size of watermelons and faces range as wide

as a power sweep in the NFL. Some epics, such as **Realms**, are of truly tiny proportions. In this mythical land, where warring cities struggle for power and domination, you try to gain control of an empire with an army of dwarfs, orcs, Amazons, and humans.

Even as you make all those micro-decisions — how much to tax your citizens and how to build your war machine — you must also develop the strategy that lets you conquer all. With eight worlds to take, you'll have your hands full.

Those taxes affect your cash flow as well as your bottom line. You'll also buy land, deal with sickness, and buy and sell grain. But this is no SimCity — when the enemy attacks, it's war. Alas, you'll find that the best-laid plans of mice and mouse-sized men oft go awry.

Each world is shown with a variety of cities — some are part of your realm, others belong to your enemy. A crystal ball (think of it as a medieval fax machine) informs you of what's happening around the land. Some cities may be low on food, while others may be under siege and

ready to fall. You can click on any location to see what's happening.

Amid the isometric landscapes you'll see your various legions of tiny men moving and fighting. Equip your troops and at some point you'll go into full-scale battle. As in the battle segments of games such as *Centurion*, you watch an overview of the field with your forces and the enemy's army on opposite sides. Once the battle begins, you control your tiny men by clicking on them and giving orders that range from facing to movement to firing. Getting to higher ground gives you the advantage; you get the best results when you attack the enemy from the rear, rather than head on. You can also position troops in different formations during battle.

Realms may be easy to play, but the manual should offer more information.

This game's graphics



PRODUCT INFORMATION

Castles II
Interplay Productions
17922 Fitch Ave.
Irvine, CA 92704
(714) 553-6655
\$59.95

640K IBM PC or compatible
12MHz or faster recommended
EGA, VGA
supports AdLib, AdLib Gold,
ProAudio Spectrum,
Roland, SoundBlaster,
SoundBlaster Pro

Lemmings
Psygnosis Ltd.
29 St. Mary's Court
Brookline, MA 02146
(617) 731-3553
\$49.99

512K IBM PC or compatible
CGA, EGA, VGA,
Tandy 16-color
supports joystick, keyboard
mouse recommended
supports AdLib, SoundBlaster

Mega Lo Mania
UbiSoft
1505 Bridgeway
Suite 105
Sausalito, CA 94965
(415) 332-8749
\$49.95

640K IBM PC or compatible
EGA, VGA
supports AdLib, SoundBlaster
joystick or mouse recommended
hard-disk drive recommended

PowerMonger
Electronic Arts
P.O. Box 7578
San Mateo, CA 94403-7578
(415) 572-2787
\$49.95

640K IBM PC or compatible
16MHz or faster recommended
EGA, VGA
requires hard-disk drive
mouse recommended
supports AdLib, Roland LAPC,
SoundBlaster

Realms
Virgin Games
18061 Fitch Ave.
Irvine, CA 92714
(800) 874-4607
\$39.99

640K IBM PC or compatible
DOS 3.3 or later
EGA, VGA, Tandy 16-color
supports AdLib, Roland

Siege
MindCraft Software
2291 205th St.
Suite 201
Torrance, CA 90501
(310) 320-5215
\$59.95

640K IBM PC or compatible
12MHz 286 or faster
VGA
requires hard-disk drive,
mouse
supports AdLib, Roland,
SoundBlaster

images are done in a dark and foreboding style that lends a cold, medieval feel. Realms delivers some first-rate entertainment, yet plenty of strategic action, too.

SERF'S UP

Few things conjure up images of valor, honor, and magic the way castles do. Interplay's **Castles II** brings the socioeconomic, political, and military aspects of the Middle Ages to the PC. This isn't some "SimCastle"-type rip-off, with simplings and simserfs, but an involved strategy game with management, political intrigue, and tactical battles. There's a lot to do here.

In the land of Bretagne, the King has died, and the result is feuding among factions bent on claiming the kingdom as their own. You'll start with your own plot of land, a few soldiers, some gold pieces, and food. Yes, you're humble at first, but you aspire to one day own and wear that crown.

In the main section of the game, tasks are everything. You'll gather natural resources, recruit soldiers, or scout adjoining areas.

It's not such a beautiful day in the medieval neighborhood. You'll struggle, as will your neighbors, to get ahead. Conflicts arise, and every leader tries to seize land to expand his own domain. The Pope also plays an important role. After all, he's the only one who can nominate you for King. Because Bingo hasn't been invented yet, the Church raises funds by soliciting indulgences — money you pay out so that your past transgressions are overlooked. Needless to say, it doesn't pay to attack Church-owned land.

Your point totals drive **Castles II**. To attack, for example, you'll have to have at least two military, one iron, and three happiness points. When you attack an adjoining territory, you finally see tiny men. Different classes of soldiers have varying abilities and strengths: Knights wreak havoc on open ground, but are hindered in the woods, for example, while archers hiding in trees are at an advantage.

THE CITIZEN KANE OF TINY MEN

Can't you just hear your mom saying, "If all your friends jumped off a cliff, would you do it, too?" Well, Psygnosis' popular **LEMMINGS**, the **Citizen Kane** of tiny-men games, fits this statement to a tee. These ever-so-dumb, but ever-so-cute, little fellas follow each other to certain doom if you don't intervene.

Your goal in this arcade game is to see a group of tiny green-haired Lemmings to safety. Obstacles include treacherous cliffs, fire, bottomless pools, and an assortment of devices designed to terrorize the little guys.

You guide them safely through each level by using your creativity and your logic to recruit some of them for productive chores. For example, you can turn one Lemming into a blocker to keep others from going into unsafe areas. Still other Lemmings can dig holes or tunnels, walk on walls, and jump from high places. Once the path is clear and safe, you can remove the blockers and let the Lemmings rip.

Lemmings features scenario after scenario, and it takes considerable powers of deduction to figure each one out — there's often more than one solution. It's an unusual free-form environment in which you're free to try almost anything, anywhere — a quality that makes Lemmings refreshingly different and obnoxiously addictive.

— W.K.



These little green-haired tykes are so cute you'll be hooked on Lemmings forever.

Click on your soldier, then tell him where to go and what to do. The key is to use the terrain and your soldiers' abilities wisely. Once you establish a few territories, you'll want to build a castle to protect your realm. You use castle parts to lay out the floor plan, then order your men to build it. Once castles are finished, the game features siege-and-defense battles.

If you've always wanted to rule your own domain King Arthur-style from the confines of a dank castle, if you want to deal with medieval politics and economics, **Castles II** takes you back to the days of old, when knights were bold, and computers weren't even invented.

TINY, TOUGH, AND TOUCHY

These tiny men may be small, but they're tough and they take nothin' from nobody.



Hold a magnifying glass over them (come on, I dare you) and they'll probably kick you in the toe. (They have short tempers and little patience.) But just try walking a centimeter in their shoes — imagine working for an egotistical, power-seeking computer gamer.

All the PC's a stage, and a strategic testing ground to boot. You have a

limited army of tiny guys with whom to take over the world and, as usual, the decisions are yours.

Do you go for the quick attack with little weaponry, or do you wait to invent superior weapons, then attack? Whatever you do, these tiny men work for you. With a digital war game on your hard drive, it really is a small world after all. □

INVASI



A TALE OF TWO PLATFORMS —
OR HOW I STOPPED WORRYING
AND LEARNED TO LOVE THE
AMIGA SECONDHAND

ON!



By PETER OLAFSON

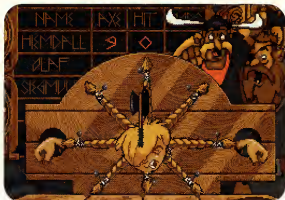
Fridays are good days. No, cancel that — they're *great* days. The work week ends, you get paid, and the PC game dealer who supports your habit gets his shipments in — what a happy convergence. You nip into the shop on the way back from lunch and do your retina scan of the shelves — not looking so much at specific boxes as for changes in the color spectrum. Bells ring — something dark and different here, over on the right — and you look more closely at the names: *Domark*, *Gremlin*, *Renegade*, *Image Works*, *Core Design*. Strangers all. Who are these guys? What's going on here?

BLAME IT ON THE AMIGA

It's a strange, but necessary, way to begin a story about PC games, for this particular tale has its roots overseas, where Commodore's 16-bit Amiga still holds court.

This tale of two computers is about European imports — those exotic visitors from abroad who have been turning up in increasing numbers on our shores. The British have invaded once again — without any “yeah, yeah, yeah” to alert us this time — and they want to take up space on your hard drive.

Illustration by Jeanette Adams



Heimdall, from Virgin Games, originated in Europe as an arcade/role-play hybrid.

Indeed, it's a fair cop they already do. (Read the small print on the last page of the docs of that new game, ch?)

A bit of background first, lad. You probably haven't considered it much — we rarely study closely those things closest to home — but the great majority of games for the IBM PC and its clones are produced at home. That's the technology's home base, after all, and the rest of the world looks to the U.S. for most of its games, just as it looks to us for movies. Open up one of England's big IBM entertainment magazines, such as *PC Review*, and you won't see Trevor McGough's Arcade Meat-Pie Eating Contest or Virtual Reality

Silly Walks, but games like *Ultima Underworld* and *Falcon 3.0*. That's not likely to change.

The story's quite different with the Amiga. Commodore may be based in West Chester, Pennsylvania, but its clever child has never caught on here in quite the way its manufacturer intended. It's now a niche machine in a niche market, and in the PC's giant shadow. Most American games are released for the PC first, and only later translated to the Amiga, if they're released for the Amiga at all.

In Europe, the situation's the opposite. Most games are released for the Amiga first, then imported to the IBM (a somewhat easier process than the reverse). And there are scads of Amiga games, for the European market has proved to be the Amiga's salvation. An all-in-one 16-bit machine at a modest price — namely, the Amiga 500 — was immensely welcome, and eventually caught up to and then surpassed the Atari ST. Europe accounts for as much as two out of every three Amigas sold, making it the King of the Hill that 80386-based machines are here.

Conversely, the IBM PC started out well down the ladder in the mid-'80s. The technology was primitive by today's standards (80286 machines were high end), sound was nonexistent unless you fancied irritating beeps, and colors were limited. And it was expensive. (It's still expensive in this smaller IBM market; in a survey of 15 486s published in a recent issue of England's *PC Format*, average price was 1330 pounds — about \$2500.) You had to come to grips

BEST OFF THE BOAT

Here are five European games to keep your viddies peeled for, mate.

ROLE-PLAY

LEGENDS OF VALOR (US:SSI/Europe: U.S. Gold). Wow. This massive RPG from the designer of Virgin's *Corporation* is essentially an *Ultima Surfaceworld*: smooth scrolling, bit-mapped walls, a vast city to explore, and lots of folks to chat up and insult. It's all in a smaller graphics window than *Underworld*'s, but with *Wolfenstein 3-D*-like detail. You can even look through the windows.

ARCADE

GOOS (US:Konami/Europe:Renegade). Who says you can't play arcade games on an IBM? Well, me, maybe, until I saw

this gorgeous confection from England's Bitmap Brothers. It's a not-so-well disguised *Super Mario Brothers* game. Lots of secret areas to puzzle out and odd beasts to send to hell.

SIMULATION

WORLD CIRCUIT (US & Europe: Microprose). Impending at this writing. Haven't seen it yet — want to very badly. This glorious *Formula One* racing game took the Amiga world by storm for its speed, detail, and in-the-chick-of-it feel. There's no reason why any of that should be lost in the move to the PC.

ADVENTURE

LURE OF THE TEMPTRESS (US:Konami/Europe:Virgin). LucasArts, watch your back — here comes competition. This

delightful animated adventure makes you think of games like *Monkey Island*. It's not as funny, but commands are more sophisticated.

OTHER STUFF

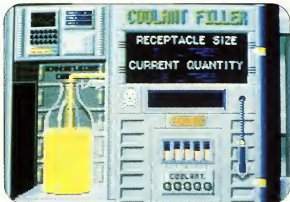
VIRTUAL REALITY STUDIO (US & Europe:Oomark). And now for something completely different: a game maker. The scrolling filled-polygon adventure had already grown rather quaint when *Ultima Underworld* shook things up last year, but making up games ourselves always seemed out of the question for the rest of us. No longer — this versatile and cleanly designed engine from Incentive Software (the folks behind *Castle Master*, *Oark Side*, and *Total Eclipse*) places it well within our grasp. Look for *VRS II* in early '93.

with an operating system up close and personal, and even as Intel's processors grew more powerful, the machine needed Windows to do what the Amiga does out of the box. And you were always having to add something to the PC — a game card just to connect a joystick, a sound board, a better monitor. With all that against the PC, it's easy to see why machines like the Amiga and the Atari ST enjoyed prominence abroad for so long.

Over the last couple of years, however, that balance has begun to shift. With prices of 386 machines dropping, a wealth of superb game software coming out of the U.S., and the technology of the standard Amiga not moving significantly ahead, the PC has been gaining ground rapidly abroad. The PC is typically credited with a European market share of around 15 percent these days, passing the ST and beginning to vie with the Amiga. More and more European games are announced as Amiga/IBM, IBM/Amiga, or, occasionally, IBM first or IBM only (as in the case of Infogrames' role-playing title *Eternam*). Observers suggest that within the next two years the PC will equal or supplant the Amiga. Wars will be fought, diplomats will bicker, but Big Blue seems on track to become not just a national staple, but a worldwide standard. Scary — and exciting.

THE UNINVITED GUEST

The upshot of all this is that there's a substantial reservoir of European-made games — either already



Spacewrecked, a sci-fi role-play adventure, offers an addictive encounter with alien forces. It's distributed here by Konami.

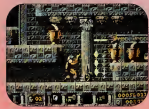
available for the IBM, pending, or transferable between platforms. So it's no surprise that the U.S. market is seeing a sizable infusion of software from overseas — one that shows no signs of abating anytime soon.

Indeed, it's not exactly a new phenomenon, but it is one that seems to have intensified over the last year or so. For instance, England's Psygnosis — best known for its Amiga releases — started bringing out PC games here in the late 1980s. Solid stuff, too, but America didn't sit up and applaud immediately; games like the difficult shoot-'em-up *Blood Money*, the science-fiction platform game *Stryx*, the filled-

PRODUCT INFORMATION



Legends of Valor, from U.S. Gold and SSI, features Ultima Underworld-style adventuring.



Gods, from Bitmap Brothers and Konami, delivers plenty of stylish, frantic arcade excitement.

Gods
Konami Inc.
900 Deefield Parkway
Buffalo Grove, IL 60089
17081 215-5100
\$39.95
640K

OOS 2.1 or later
12MHz recommended
EGA, MCGA, VGA
requires hard drive
joystick optional
supports AdLib, Roland,
SoundBlaster

Legends of Valor
Strategic Simulations
675 Almaror Ave.
Suite 201
Sunnyvale, CA 94086
14081 737-6800
\$59.95
640K
256-color VGA

requires hard drive,
mouse, keyboard
supports major
sound boards

Lure of the Temptress
Konami Inc.
900 Deefield Parkway
Buffalo Grove, IL 60089
17081 215-5100
\$49.95

640K
OOS 2.0 or later
10MHz recommended
256-color VGA
requires hard drive
mouse recommended
supports AdLib, Roland,
SoundBlaster

Virtual Reality Studio
Omikron
1900 South Norfolk St.
Suite 202

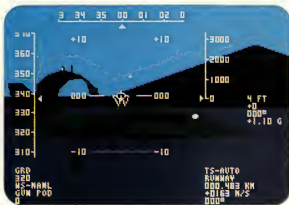
San Mateo, CA 94403
(415) 513-8933 tech
(800) 245-7744 orders
\$89.95

640K
CGA, EGA, VGA
hard drive,
mouse recommended
supports AdLib

World Circuit
MicroProse Software
180 Lakefront Drive
Hunt Valley, MD 21030
(410) 771-1151

\$59.95
640K
386
VGA

requires hard drive
joystick recommended
supports major
sound boards



The Cold War heats up: East and West battle it out in *Birds of Prey*, developed in Europe by Argonaut and distributed in the U.S. by Electronic Arts.



Maneuvers are easy in *MiG-29 Fulcrum*, thanks to a simplified cockpit display. This one's from the U.S. office of Domark, a British publisher.

polygon adventure *Infestation*, and the puzzler *Never Mind* never really took off. The PC market is this country is tough to crack "unless you have a really good game or a lot of marketing muscle," says one insider at Psygnosis.

For Psygnosis, that "really good game" is the celebrated arcade/puzzler *Lemmings* — released in 1991, three months after the Amiga version. To date, the PC version has sold more than 100,000 copies in the U.S. alone. Psygnosis followed up with the strategy game *Atomino*, the arcade/role-playing game *Obitus*, and the track-and-field title *The Carl Lewis Challenge* — this last its first simultaneous Amiga/IBM release. *Creepers*, developed on the PC, will come out first on that platform, and *Lemmings II* is slated for mid-February release alongside the Amiga version. Psygnosis is clearly committed to developing for the PC.

It's a simple reality. "That's where the American market is," says Phil Sandock, Psygnosis' marketing manager. "We're Psygnosis North America, and if we're going to sell in this market, we have to sell PC." And companies here often find it more cost-effective to buy the rights to distribute a completed European game — or an easily translated one — than to shepherd something through development from scratch. Let's look at a sample of the stuff that's seen release already or will soon.

EUROPEANS IN DISGUISE

Konami has moved heaven and earth to bring over prime European games — inking distribution deals with Old World developers such as Image-Works, Gremlin Graphics, and Renegade. Its Euro-releases to date include *Bloodwych*, a two-player Dungeon Master-style game; *Killing Cloud*, a flight-sim/strategy combo set in a San Francisco shrouded in poisonous vapor; *Speedball 2*, a futuristic *Rollerball*-meets-lacrosse; *Team Suzuki*, a filled-polygon motorcycle racing game; *Riders of Rohan*, a war game drawn from *Lord of the Rings*; *Spacewrecked*, a science-fiction role-playing game; *Plan 9 from Outer Space*, a graphics adventure based one of the worst movies ever made; and *Lure of the Temptress*, a delightfully elaborate animated adventure with an object-oriented command system. Sometime in the first quarter of 1993, it hopes to bring out Bitmap Brothers' arcade/role-playing extravaganza *The Chaos Engine*.

SSI has already brought over U.S. Gold's fantasy adventure *Shadow Sorcerer* — a follow-up to its earlier *Heroes of the Lance* and *Dragons of Flame*. The publisher has also imported Millennium's arcade/strategy game *Steel Empire* — renaming it *Cyber Empires* in the process. At press time the company is also promising *Legends of Valor*, an Ultima Underworld-style game, but with greater detail and both indoor and outdoor settings, this winter.

Electronic Arts, with a whole division overseas, has released *Populous* and *Powermonger* from England's Bullfrog, and *Birds of Prey* from Argonaut. In addition, by the time this appears we'll probably all be playing *Risky Woods* — a very Sega Genesis-like arcade confection.

Mindscape, which also has a UK division, has brought over *Four Crystals of Trazere* (known as *Legend in Europe*) and just recently a vast role-playing game called *Captive*.

Interplay's imported the graphics adventures *Future Wars* and *Operation Stealth* (here called *James Bond: The Stealth Affair*) and the arcade adventure *Out of This World* — all from France's

Delphine label. We can also probably expect it will handle the follow-up to *Out of This World*, a game called **Flashback**. U.S. Gold has brought out **Cruise for a Corpse** and the mammoth arcade game **The Godfather**, among others, but has since gotten out of the floppy business on this side of the pond.

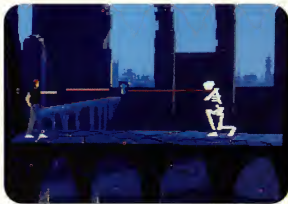
Domark, an English company, has opened a U.S. office and released a slew of titles: **Virtual Reality Studio**, Tengen's **Arcade Hits**, **Mig-29 Fulcrum**, **Pit Fighter**, and **Super Space Invaders**. At press time, the company was also slated to release **Virtual Reality Studio II** in January. Even Sierra On-Line, which has long looked eastward for its imports (in the form of two **Thexder** games), is distributing the puzzle game **Gobliiins** from France's Coktel Vision label, and may have released a sequel as well by the time you read this.

MicroProse's U.K. division regularly disgorges a host of titles, with this year's crop including **B-17 Flying Fortress**, **Special Forces**, **ATAC** (fighter planes just say "no" to drugs), the Formula One racing game **World Circuit**, the golf game **Greens**, and its haunted-house game **Legacy**. Accolade's scary role-play lineup — the two **Elvira** games and **Waxworks** — come from a British development house called Horrorsoft. Smaller companies such as Texas' RAW Entertainment — best known for its war games — are going to the well as well; RAW's brought over **Spoils of War** and **Ugh!**, an arcade game. Need more? They're out there everywhere.

MADE IN THE U.S.A.

Not all PC games from Europe turn up in U.S. stores. There's a burgeoning market for imported PC games that haven't yet found a domestic sponsor. Ever seen Pandora's **Xenomorph**, Silmari's **Ishar**, or Ocean's **Wizkid**? Thought not. Some companies go against this grain, and, oddly enough, Virgin Games — ostensibly a British publisher — is one of them. To look at its catalogue of recent and planned releases, you'd think it would be the perfect example of the assimilation of European software into the U.S. market; the smooth-scrolling **RPG Corporation**, the spying-murder-and-dirty-tricks fest **Floor 13**, the simulations **Shuttle** and **Thunderhawk**, **Dune**, the quest games **Realms** and **Overlord**, the arcade/role-playing game **Heimdall**, the graphics adventure **KGB**, the flight sim **Reach for the Skies**, **Legacy of the Necromancer**, and beat-'em-up **Double Dragon III** are all of European origin.

So — you don't like European games, eh? "We weren't doing any [games] here," says Seth Mendelsohn, who handles marketing and public relations for Virgin. "The company used to be run



Out of This World, an arcade adventure from the French company Delphine and marketed here by Interplay, sports a unique cinema-slick look.

out of the U.K. office. We were a lot smaller here, and the products were there and they were done and available, and we just took them."

Indeed, up until about two years ago, some 75 percent of Virgin's product line came from the U.K. Since then, the division that handled distribution of Sega products in Europe was sold to Sega, and Virgin itself acquired Westwood Studios, with the result that the company is now effectively based in the U.S. and more focused on internal projects, such as **Legend of Kyrandia** and new versions of **Monopoly**.

Virgin has discovered that many European games, with a few exceptions like **Dune**, don't make it big here. "People in Europe have different ways of playing," Mendelsohn says. "I think, when they buy a game, that they play it until they finish it. Here it's if they like it, they play it. If not, they just turn it off. European games are definitely scaled a lot harder, because they know players are going to play it. Here, they try to get you in quicker."

That wasn't the only problem. The inherited Amiga palettes were sometimes closer to EGA than the VGA standard. The sound wasn't always up to snuff, either. And arcade elements, which are prevalent in Europe, tend to not go over well with American PC gamers.

"It's always been more acceptable in Europe to have lesser quality," Mendelsohn adds. "A little bugger, a little messier. You could get away with a little more." Mendelsohn expects the PC will overtake the Amiga in Europe after Christmas, and that as development turns increasingly in that direction, quality will improve.

HOW TO SPOT A EUROPEAN

So who are all these critters, and why are they knocking on our disk-drive doors?



Team Suzuki, a filled-polygon motorcycle racing game marketed in the U.S. by Konami, brings speed and 3-D animation to your PC screen.

The "why" we've already explored. As for the "who," they're not all that different from their American cousins — though more soccer games probably turn up in Europe in a month than appear here in a year. VGA is becoming standard Over There as it is Over Here (though you don't have to go back that far to find EGA games). Games install on your hard disk and typically support sound boards (though it's more likely to be AdLib than SoundBlaster Pro 2 at this point). Games like Ocean's *Hook* (based on the Spielberg movie) are very clearly influenced by animated adventures such as LucasArts' *The Secret of Monkey Island*. MicroProse UK's *Greens* (mentioned above) offers a very accessible game of golf. Millennium's *Global Effect* (distributed here by Electronic Arts) and Gremlin Graphics' *Utopia* (Konami) both owe much of their inspiration to titles like Maxis' *SimCity*.

And yet there are some differences. Generalizations are always a bit dangerous — you just know there's going to be one game that flips them all on their backs like tortises — but let's make take a risk and make a few.

These games, born in the bosom of other machines, preserve some of the identity of their parents. They tend to be smaller than the average domestic title (usually hovering around 2 or 3 megabytes), doubtless because many of them were designed to be played from floppy disk on Amigas — the basic European configuration of which is still a one-drive, 512K machine.

Certain types and styles of games are especially popular in Europe. Europeans, for instance, love games made from movies. There are a large number of look-down-from-an-angle (isometric) games, the kind that make you feel as though you're

peering down from a low-flying plane. First-person role-playing games à la *Dungeon Master* are everywhere. (That may be a little tough for us to grasp, since the game only just turned up on the PC. But in Europe, it arrived long before what-you-see-is-what-you-get games hit the PC in such packages as *Eye of the Beholder*.) And look for a run of Lemmings-influenced puzzle games.

Then there's the arcade issue. Arcade games aren't exactly plentiful on the PC. By and large, they don't do well, and, by and large, the PC doesn't do them well. (A lovely exception is the PC version of Bitmap Brothers' *Gods*, distributed by Konami). And here's the rub: Much of European output is devoted to arcade games — no doubt because they play particularly well on the Amiga. It's unlikely, for instance, that Psygnosis will port its celebrated *Shadow of the Beast* trilogy to the PC simply because of the potentially heady technical requirements — a 386DX running at about 33 megahertz.

European games are also quirkiest in some respects — more prone to do something slightly out of step or curious. That's not a complaint, just a statement, as the quirks are often delightful. In Virgin's *Floor 13*, for example, we get cryptic advice from creatures that look like nothing so much as Egyptian pharaohs. In Domark's *Shadowlands*, you click on specific body parts on character outlines at the bottom of the screen to give orders. And while a light source is only a light source in many role-playing games — keeping wherever you're at visible — here a flickering, wavering circle of light, shaded at the periphery, follows the torch bearer. Step out of the circle, and you're in utter darkness. Foreign games are also a bit more ragged around the edges — less likely to identify your hardware during installation, more likely to under-explain a given feature in the manual.

And to a certain extent, they're just different. There's no other way to put it. They have a subtle accent, a personality, a cultural aura, an overall "feel" that's perhaps more around-the-edges than substantive, and better sensed than described. Playing a good European game can make you feel as though you've just awakened in a foreign city. You feel it behind your eyes, on the back of your tongue, and on the short hairs of your neck. The game is from someplace else, and, for a time, it takes you back with it.

It's a matter of personal taste. It's the old Monty Python argument: Some people love English humor, some just don't get it. What can I say? Blame it on the Amiga. □



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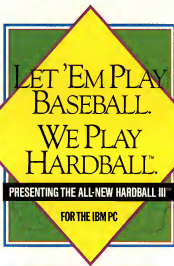
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Play-by-play announcing requires 2MB of RAM. Actual game screens from IBM PC VGA version of the game. Other versions may vary. *HardBall II*, *HardBall III* and *HardBall* are trademarks of Accolade, Inc. Earl Weaver II is a trademark of Electronic Arts. Tony LaRussa is a trademark of Strategic Simulations, Inc. All other product and corporate names are trademarks and registered trademarks of their respective owners. © 1992 Accolade, Inc. All rights reserved.

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NFL Video Pro Football combines coaching strategy with digitized action from the NFL film archives.

NFL VIDEO PRO FOOTBALL

By Brad Dixon

Twenty-three seconds on the clock. Fourth quarter. It's a Cinderella story. Your team has the ball on the opposition's 37-yard line and you're down 24 to 20. It's third and 8. You've got time to run two plays before time runs out, and only a touchdown will do it. What's the call, coach?

In NFL Video Pro Football, this scenario (and any number of other nerve-wracking situations) will confront you every time you load the game. With all those weeks of armchair quarterbacking under your belt, it's time to test your mettle.

NFL Video Pro Football combines sharp and colorful computer-graphics images, digital sound, digitized motion video, and football savvy that

will challenge even the most ardent fan. This game will keep your spirit mesmerized, your heart pumping, and your mind racing.

FIRST AND TEN

NFL Video Pro Football is a hard-drive hog — it takes up more than 22 megabytes. So if you're short on PC storage space, you may not even get out of the locker room.

If you do make it out to the field, you'll appreciate the package's interface, which lets you use the mouse to do things such as pick the players and check the stats. If you play against a human opponent in a two-person contest, someone has to use the keyboard.

Teams and rosters are found on the *Newspaper* screen, where you also begin play. From there, you head to the *Studio*, where 14 video monitors are displayed on screen, each representing one of the contests scheduled for the day.

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You can watch all the games simultaneously, or you can take a single game to its deepest level: right to the stadium of the game you want to coach.

HUDDLE UP

In the stadium, you command the action for the home team. You can view the action from a full-field, skybox vantage point, or within a window about a quarter the size of your computer screen.

This is where the action is. On offense and defense you can choose from six formations, each offering 12 possible plays. Try your hand at running a run-and-shoot offense, a pro set, or the passing power of a four-wide set.

While on defense, you can pick your best plays from a goal-line formation, a nickel defense, or Chicago's famous 46 formation. Your team knows them all.

Once you've called the play, run it, then sit back and listen to the pop of the players' pads, the groaning of your fullback as he struggles through the line, and the background commentary of the play-by-play announcer — all while a digitized action-music soundtrack accompanies the on-field drama.

To help you develop your coaching skills, NFL Video Pro Football offers time-outs, a no-huddle option that speeds play, and choices that change the strategy of the called plays: The *Strategy* icon lets you increase or decrease the aggressiveness of plays called by the computer during a no-huddle offense.

If you tire of the current game, you can leave it in no-huddle mode and head back to the *Studio* to catch up on any of the other 13 battles being fought. You can jump into any other game that interests you, coach for a while, and leave that one in no-

huddle, and it, too, continues on its own until time runs out.

When you've exhausted yourself by jumping from game to game, coaching the best and worst outfits in the league, you can save the action for next time.

THE POST-GAME SHOW

If you're not happy with the way some of your people are playing, bench 'em. Go back to *Newspaper* level, point-and-click on the team you want to change, and find the player you want to replace; each man on every team has a substitute. You also can adjust some player attributes, such as running ability, pass-catching coordination, and the quarterback's arm strength.

Spirit of Discovery and Konami have assembled an intriguing football game here. NFL Video Pro Football's digitized action, taken from the NFL film archives, enhances the game and gives you the feeling



A time when the world seemed more fantastic and anything was possible!

Journey back in time to the year 1957 on an expedition to the dark heart of the Amazon Basin. A desperate, crazed message sends you on a perilous search through a land where legends come to life, danger hides behind every corner, and incredible treasures wait to be discovered.

AMAZON is designed in the style of the serials of the 1940's and 50's such as Flash Gordon, The Lost City, and Rocketman.

These serials were made up of intriguing, fast paced episodes which placed the hero in unbelievable peril. AMAZON contains 14 exciting episodes filled with plot twists, mysterious characters and heart stopping cliff-hangers. You haven't had this much fun since the drive-in days!



Metal monsters seek your destruction!

of being there when you call the plays. The game's 144 different plays are enough to satisfy almost any Monday-morning critic.

Konami Inc., 900 Deerfield Parkway, Buffalo Grove, IL 60089-4510, (708) 215-5100; IBM PC or compatible, 12MHz 286 or faster, DOS 3.3 or later, VGA; supports SoundBlaster; requires mouse, hard-disk drive, 22MB free; \$79.95

STAR CONTROL II

By Ed Ferrell

Guess too many game designers watched too many episodes of *Star Trek*. They've made so many captain-a-starship games you can't swing a dead Andorian without hitting one.

So what gives? Another captain's game? Another game in which you

outfit a starship, assign a crew, and fuel up for a mining mission among the solar system?

Not really. *Star Control II* may be that, but it's much, much more. It's got a story so big it has to be played on the largest of all stages — the universe. What else could hold an epic adventure that evokes history 250 millennia deep?

Part arcade, part role-play, *Star Control II* is all science fiction, with the emphasis on *fiction*. As captain, you explore dust worlds, greenhouse worlds, radioactive worlds, and reduction worlds. Contact with outrageous aliens is unavoidable, and the creatures you meet have fantastic, if not always logical, looks.

WE ARE NOT ALONE

A rich history is woven into *Star Control II*, beginning for humans with the invention of radio. The evil Ur-Quan hadn't noticed Earth until

broadcasts reached their ships. The game begins in the year 2155, as you captain home a deep-space exploration ship. Back at Earth's star base, you discover that the evil Ur-Quan have made a slave planet out of Terra.

Selecting dialogue from a choice box, you must convince the star-base commander to help you fight back. Along the way, you learn that the star base's supplies are depleted. Raw materials are needed, and needed fast, if you're to have any hope of throwing off the Ur-Quan oppressors.

It's lucky that this universe holds many suns and numerous planets, some of which have surfaces covered with the raw elements, minerals, and energy sources you need. You staff your starship with a crew, buy a few landers, and top off your tank.

Piloting your ship around the solar system is a snap, though one sop to real physics means you must reverse course and hit the thrusters to slow



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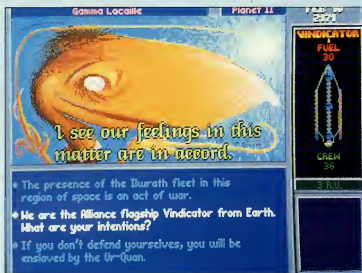
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Gasps in disbelief at the lost tribe of Amazon women!*

*Actual Amazon VGA screens.



Star Control: All the universe's a stage, and all the men and cyborgs merely players.

down. There's no fancy animation here — your ship is the only moving object on the otherwise static system map.

Enter standard orbit by "running over" a planet with your ship, and the system map's replaced with a beautiful visual of the spinning globe. Below this, scanners reveal the locations of mineral deposits and energy sources. Another display lists surface temperature, tectonic activity, and weather systems.

Pick a profitable landing site and dispatch one of the landers to the surface. Guide the lander over the glowing mineral deposits and they're loaded automatically. It's unfortunate that most of the desperately needed radioactives exist in the harshest environments, where vicious lightning and earthquakes threaten the safety of the lander and its crew.

Take heart, for the landers can take some hits. Just watch your battery level and crew lights. Arcade play is tense, and when you can't stand one more lightning bolt, you'll sweat the choice between blast-off and picking up that last load of precious metals.

Biological scans reveal alien life forms — blobs, vapors, or plants — which you can usually stun or at least hold at bay. Manageable samples may be valu-

able in later trades with other species. Return to the star base, unload your booty, and spend your credits to replace the landers you lost. Earn enough credits and you can add thrusters and additional fuel tanks to your ship. Crew pods and extra storage modules will make your trips more profitable. Soon you'll have strip-mined Sol's system, and must head for the stars.

FIRST CONTACT

You just point and click on the star map to enter the beautiful, but dangerous, world of hyperspace. It's the fastest way to the stars, but as you extend your search for raw materials, you're sure to encounter a number of unusual alien races.

First-contact role-play always offers a choice between attacking or conversing, but because you're as outnumbered here as you are against the Ur-Quan, it's smart to make as many alliances as you can. Not only is there strength in numbers, but you may benefit from your friends' advanced technology as well.

Alliances can be tricky, especially with the hard-trading Melnorme. And although it's a good idea to take on any comers who want to join you, it's doubtful that the cowardly Spathi

will be any help in a shoot-out. More than dozen different alien warships provide fast-action combat in *Star Control II* — and it's a tough arcade challenge to master. Prudent captains will gain experience in the pure-combat scenario before playing a full game. If you can't resist the call of the cosmos until you can shoot the fins off an Ur-Quan fighter, let a cyborg help you.

And don't overlook the time-honored military tactic of running away. An emergency maneuver can encapsulate your ship within a protective shield while your batteries charge and warp you out of harm's way.

Hey, it looks as though it's as much fun to throw off the bonds of evil Ur-Quan slavery as it is for "Bones" McCoy to declare, "He's dead, Jim."

Accolade, 5300 Stevens Creek Boulevard, San Jose, CA 95129, (800) 245-7744; IBM PC or compatible, 20MHz 386 or faster recommended, 640K RAM; VGA, MCGA; supports AdLib, ASC Media Master, ProAudio Spectrum, SoundBlaster, SoundMaster II, Sound Source, Speech Thing; requires hard-disk drive, 6.5MB free; \$59.95

WAXWORKS

By Bernie Yee

With *Waxworks*, a game that sends you exploring a hellish version of a Vincent Price movie, *Accolade's* added another item to the already burgeoning heap of fantasy role-playing titles.

If this one has a familiar look — lots of blood and gore — you can thank *Horrorsoft*, the sickos behind *Accolade's* widely known *Elvira* series. *Waxworks* follows in that vein (ouch!) — too much so, in fact, so that it's just more of the same old death and destruction.

Waxworks is big — there are more interminable tunnels and mazes than you can hack and slash your way through — but, then, size isn't everything.

Isn't It Time You Played David Leadbetter's Greens?

If you're tired of using your sand wedge as a shovel, play **David Leadbetter's Greens**. It's the 3-D golf simulation that improves your game.

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Circle 46 on Reader Service Card



Waxworks: same old gore, no new blood.

The story begins with the disappearance of your brother in the tunnels near the wax museum owned by your macabre — and now deceased — Uncle Boris. You had a good mind to burn down the old building, but the whole affair wasn't quite settled. When Boris' body turned out to be missing from his grave, you knew something was up.

Suffice it to say that Waxworks tosses together a family curse, the forces of evil, and a quest. The latter has you delving into the waxworks, where each display is a magical portal to another time. There, your possessed brother is gathering evil characters out of the past to unleash on the world today.

THE EVIL THAT MEN DO

Waxworks is pure Horrorsoft. Its color palette is a gathering of wan, corpse-like, bleached hues, and the soundtrack consists of suitably ominous period music for each era you explore. And explore you will, because the game lets you enter, for example, an eight-level pyramid, a mine, and the streets of London.

Bad guys roam the streets and hallways in wait for you. Fighting is suitably bloody, and images of dismembered and decapitated corpses are mind-numbingly frequent. The game's

combat system seems to have been simplified from the Elvira days, when each part of your character's body could sustain a number of injuries (racking up those "hit points") before you had to suffer forced amputation.

The interface display is otherwise chock-full of mouse-driven options, from a compass to the ubiquitous hand icon. When you click on an object, various context-sensitive options pop up. Of course, a few benign beasts wait to talk to you as well, but you'll probably converse more with dead Uncle Boris than anyone else. Your crystal ball is a link to Boris' spirit, which provides information and some gypsy magic, at a cost to your mental stamina. There are a limited number of questions and healing requests you can ask of moldy Boris for each world you explore. And healing you'll need, for a lot of the blood that spurts so gleefully on the VGA display will be yours.

Waxworks is huge, so huge in fact that its lack of automapping will surely discourage all but the most dedicated fan of Horrorsoft. What's its excuse for not including this feature? And why hasn't Horrorsoft improved its role-play engine? Role play in Waxworks remains largely the same as that in Horrorsoft's Elvira games. It

sports cosmetic niceties, such as a drag-and-drop inventory system, but it lacks real meat. Horrorsoft's willingness to use movie conventions and to make its games more graphically violent (accompanied by an appropriate warning sticker on the box, in an example of self-policing) is to be applauded, certainly, but it's missing the technology boat by not keeping up with changes.

This title tells a new story, true, with additional bloody artwork to gape at, but because it uses an old game system, it actually offers nothing new. Waxworks is a game strictly for fans of Elvira's chassis, not her engine.

Accolade, 5300 Stevens Creek Boulevard, San Jose, CA 95129, (800) 245-7744; IBM PC or compatible, 640K RAM; VGA; supports all major sound boards; requires mouse, hard-disk drive; \$69.95

MICROLEAGUE ACTION SPORTS SOCCER

By Wayne Kawamoto

They call itootball. But if it's football, where are the hulking behemoths knocking heads? Where's the I formation? Where are the flying wide receivers and killer linebackers?

We call it soccer. This global game — where the players use their feet and the action in the grandstands sometimes rivals that on the field — may be popular from Argentina to Zimbabwe, but in the U.S.A. it's just a minor sport. But that didn't keep MicroLeague, known for statistics-based sports software, from creating Action Sports Soccer, an arcade game in which you control the players and pursue a coveted cup championship.

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FREE CATALOG

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When you use your head in Action Sports Soccer, it's for hitting the ball, not strategic thinking.

You control the Manchester United Football Club, a team that aspires to the European Super Cup, European Cup Winners Cup, or United Europe Football Association (UEFA) Cup. In matchups and tournament play, you mimic a real march for the top.

Action Sports Soccer's action doesn't get marks for originality: It plays virtually the same as its electronic soccer ancestors. You control the player with the ball when you're on offense and the player nearest the ball on defense, as you push the ball up and down the field toward the goals. As in most other PC sports games, you can play Action Sports Soccer one on one or against the computer.

You'll be surprised that this game plays much like arcade basketball, a result of the superficial way both sports are re-created on the PC. Although the two are quite different in real life, on the computer you could conceivably swap uniforms and still see much the same results on screen. (The only real difference is that PC basketball players dribble the ball with their hands; PC soccer players use their feet.)

Strategically, there are a few things you can do with Action Sports Soccer. You can set the formation and substitute players along the way, or view stats such as goals scored, goals

allowed, and number of games played. Although you can set skill levels for various players on your team, it hardly seems to make a difference.

Action Sports Soccer's rife with problems, many of which you can blame on the game's mechanics. For instance, it's often tough to tell which player you're controlling, mainly because the action moves so fast and the controlled player's marking isn't obvious.

Even harder to adjust to is your ever-changing defensive player. You close in on the ball with a defensive man, then suddenly you're controlling a different player, simply because he happens to be closer to the action now. The constant changes force you to find the new player first, then figure out where he should go. As you become more familiar with Action Sports Soccer, you should be able to anticipate these flips and flops better.

Action Sports Soccer lets you use different kinds of kicks, controlling them by varying the length of time you hold down the action and direction keys. But that's pretty hard to do during a heated game.

Real soccer may be fast, but on a 486 machine, Action Soccer gets ridiculous — on a powerful PC, it's almost impossible to play. At high speed, it's hard to gain control over the ball, as

the players overshoot it constantly. You'll have to slow down your computer to make Action Sports Soccer playable, even comprehensible.

The game purports to work with the keyboard, but you'll have to be a contortionist. (Z and X are right and left, respectively, while R and D are up and down.) It's virtually impossible to use during a fast-action game like this. Stick with a joystick.

Soccer's 256-color graphics images are on par with today's sports games. It supports the AdLib sound board for its introductory music, but when you're in the midst of soccer action, it's back to the beeps of your internal speaker. Documentation is sparse and glosses over even the program's basics.

The great Pele — soccer's greatest star ever — tried to popularize the sport in the U.S. But although it's fashionable with younger kids, it can't compete with football. Nor can Action Sports Soccer compete with PC football. Without the strategic thought that goes into any sport, soccer included, a PC package is simply an excuse to exercise the joystick. If, and only if, you want some casual arcade action, think about playing "football" with Action Sports Soccer.

MicroLeague Sports, 2201 Drummond Plaza, Newark, DE 19711, (302) 368-9990; IBM PC or compatible, 640K RAM; EGA, VGA; supports AdLib; \$39.95

SPELLJAMMER

By Bernie Yee

In the beginning, there was the Gold Box series and *only* the Gold Box series. If you wanted to play in the Advanced Dungeons & Dragons universe with a digital dungeon master, Gold Box was it. Then came Eye of the Beholder, which used the less-xenophobic Second Edition AD&D rules (and a Dungeonmaster-clone engine). But just when we thought we had it made, SSI and Westwood (Beholder's designers) parted company.

Not to worry. To fill the gap, SSI has launched a host of ventures that apply a new engine. In the tradition of Space 1889 and Worlds of Ultima: Martian Dreams, SSI's Spelljammer works with an AD&D system that takes you out of this world.

MARVEL AT THE COMICS

In a mode of transportation reminiscent of Marvel Comics' *Thor*, you command a magically powered ship that looks like a wooden-hulled boat. Instead of plying the seas, though, you're sailing through the ether and into space.

Like any good character in a role-playing game, you leave home in hopes of making your fortune trading and pirating throughout the solar system. Other planets feature a variety of indigenous races, such as the Neogi, Mind Flayers, and Lizardmen. All roam the ground and the spaceways.

Spelljammer's space travel is no Wing Commander. Somehow, it makes sense that this sailing ship moves in only two dimensions. It makes Spelljammer more playable. Isn't that enough?

Because you're sailing in a mystic ether atmosphere, you need to worry only about air and weapons — catapults, ballista, even arrows and spears to attack the hostile spacefaring species you encounter.

Ship-to-ship combat is most like battles in *Buck Rogers* — simplistic and to the point. Ships carry hit points, and the object, naturally, is to hit the enemy harder and more often than he hits you. You can also attempt to ram or shear the enemy ship, or — my favorite — grapple with your nemesis and board her.

BEAT 'EM UP

Until this point, game play isn't what you'd expect from an AD&D computer role-playing game system. Although you and your crew are AD&D characters, all with statistics, spells, and an inventory of items, there's little role-playing as you know it. Spelljammer is best characterized as a trading/combat simulation.

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Spelljammer features plenty of interstellar death and destruction.

Boarding, though, turns the tables back to the more familiar. The hand-to-hand combat screen looks a bit like a cartoonish Gold Box holdover, a top-down display of turn-based combat. That's good, because managing combat for a party of ten or more in real time would require too much hard-disk-drive space.

Like the main spacefaring display, the hand-to-hand interface is a point-and-click affair, with different action icons popping up at appropriate times. Graphics images, while not revolutionary, are adequate, though clearly not up to the standards set bySSI's own Eye of the Beholder.

If you thought the Gold Box series was combat intensive, Spelljammer will drown you in blood. And there aren't the usual puzzles to break up that river of red. Instead, you must solve an interstellar mystery and find the hidden Neogi slave base.

Character development is unlikely, because your crew can rotate and change as the game progresses; only your stalwart captain is really "you."

HUNGRY FOR MORE

All in all, Spelljammer seems more like a real-time action/strategy game with a fantasy whitewash than a fantasy role-playing game. It's this very approach that may throw you.

And you'll probably feel a bit empty in the end, because this universe, though filled with menu-driven descriptions of town halls, temples, and taverns, doesn't provide a full world to explore on each planet. Spelljammer is an interesting excursion into a universe that deserves more detail.

Strategic Simulations, 675 Almanor Avenue, Suite 201, Sunnyvale, CA 94086, (408) 737-6800; IBM PC or compatible, 386 or 486, 33MHz or faster recommended, 640K RAM, DOS 5.0 or later or DR. DOS 6.0; VGA; supports AdLib, Roland, SoundBlaster, SoundBlaster Pro, ThunderBoard; requires hard drive, mouse recommended; \$59.95

THE ANIMALS

By Heidi E. H. Aycock

Sometimes things just click — everything goes right. And when that happens, all you can do is smile.

The Animals, a CD-ROM title from Software Toolworks, will coax a smile from almost any parent, and a grin of glee from almost any kid. This virtual visit to the zoo entertains and educates. It's one of the best multimedia programs for the PC yet.

The Animals is a multimedia CD-ROM package with clearly written text, beautiful photographic images, realistic sound, and impressive live-action video. All these elements are woven artfully into a well-designed interface. You'll find flaws, but they barely detract from the experience.

This collection of images, sounds, and information from the San Diego Zoo effectively hands you a lifetime pass to one of the world's best collections. You see and hear the animals and watch them wander their habitats. Best of all, you can explore the exhibits in any order and at your own pace.

Guides are always available. Represented by text windows and audio speeches, they're clever and fun to follow. Although some of the guide passages are long and challenging, other text is written especially for children. The children's area of the zoo, for instance, includes storybooks with simple text and great photographs; a guide recites these books aloud for prereaders.

For all the guides' expertise, though, The Animals goes one better: The creatures are always out and you always have a front-row seat. No standing in line, no peering over other shoulders. What more could you ask?

The view from that front row is sharp. Even on a VGA monitor the still pictures are crystal clear and richly colored — detailed enough so that you can see that Moma Lisa smile on the cobra's mouth.

Sound effects are just as impressive. The giggling howl of the coyote is as unsettling as the sly, come-hither look in its eyes. Because the animal sounds are accompanied by the ambient noise of the zoo, the end effect is utterly realistic. You hear a waterfall as well as the sound of people talking, for example, as you watch live-action videos of tigers playing in their habitat.

And video is what separates this multimedia compact disc from its cruder competitors on floppy. In the long movie featuring tigers roaming their river environment, you'll watch them move gracefully along the bank. When one tiger sees a leaf in the water, it pounces. The spectators

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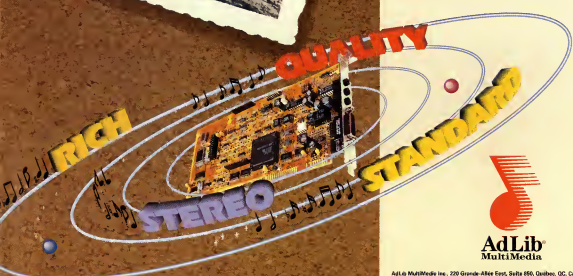
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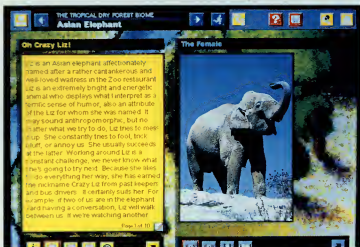



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AMAZON

By Peter Olafson



The Animals' video segments distinguish this electronic trip to the zoo from its competitors.

laugh, and so will you. These videos are clear enough to convey the detailed beauty of the animals, though they occasionally decay into dots in small portions of the image.

It's almost impossible to get lost in this electronic animal park. In fact, The Animals offers an exceptional interface, one of the best around. You navigate through the program by clicking on buttons or on words in a list. If you know you want to see a picture of a whale, for example, you just click on the button that takes you to an alphabetic listing. Find *whale*, and click on it. In seconds, you're staring at a barracuda-encrusted mammal. If you'd rather explore an entire environment, click on the appropriate part of the zoo's map. When you point to a button, help notes pop up. Rather than intrusive, they're succinct and subtle.

For all its quality, The Animals isn't quite flawless. One problem is that the movies, sound clips, text, and pictures are organized by animals' full names — *striped hyena* and *lowland gorilla*, for example. Unless you know the full name, you may have a hard time searching for the animals you want to see — you won't find the hyenas under *H* or gorillas under *G*. (The program provides keyword search, though.)

But even these glitches take nothing away from The Animals. The real value of this compact disc is that it offers information in an entertaining way. Although it doesn't beat a real trip to the zoo, it has its advantages. You can explore in your own way, at your own speed.

Children and adults will enjoy this program together because it encourages discussion and further exploration. Besides teaching facts about animals, the program explains how some animals have become endangered, and how we can stem the tide of extinction. It encourages environmentally sound values and offers hope.

Rarely does a program do such an excellent job of crafting so much information into an easy-to-use and beautiful package. If you're looking for a terrific example of multimedia, a fine reason for investing in CD-ROM technology, a great way to spend months of rainy afternoons, put this digital zoo on your shelf.

Software Toolworks, 60 Leveroni Court, Novato, CA 94949, (415) 883-3000; IBM PC or compatible, 16MHz; 286 or faster recommended, 1MB RAM, DOS 3.3 or later; VGA; supports ProAudio Spectrum, Sound Blaster; requires CD-ROM drive, mouse, hard drive, 2MB free space; \$119.95

At its bountiful best, Amazon: Guardian of Eden is as lush and unspoiled as the heart of the Brazilian rainforest — with a dozen species of fun beckoning to you from the trees, a poison puzzle under every rock, a hundred deaths waiting as you search for solutions. For beauty, for variety, for sheer size, it stands with the finest examples of the RPG genre. I'm hooked.

And yet, the outskirts of this rainforest seem to have been sacrificed a bit during development. Although the game itself is undeniably charming, some of its mechanics leave much to be desired.

The good news, and there's plenty of it, is that Amazon is every bit the worthy successor to Access' Mean Streets, Countdown, and Martian Memorandum. Mix a few fragrant echoes of *Indiana Jones* with a movie-serial structure; add All-American boy, blonde squeeze, and badnick South American colonel; subtract one brother, who's vanished while investigating reports of startling regrowth in deforested areas of the Amazon; toss in assassins, death squads, cannibals, and some very hungry fish.

Amazon is enormously entertaining. It never does too much of the same thing, and what it does, it does splendidly in vivid VGA (or SVGA, but more on that in a second), mixed with some pleasant computer-game elevator music. (The game supports a number of popular sound boards for music, but Access' RealSound technology allows digitized speech without extra hardware.)

You don't look at just the usual side views, but at overhead views, look-down-from-an-angle views, and first-person views reminiscent of Dynamix's graphics adventures. You'll pilot a plane in trouble, paddle a canoe in a rock-laden jungle river, and find yourself at the mercy of a giant red ant. There are cooperative two-character

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It's a jungle out there — more assassins and piranha than you can shake a mouse at.

puzzles, races against time, and elaborate arcade sequences. The variety and difficulty of the challenges can be heady, even with on-line hints, and the sights and sounds are intoxicat-

ing, right down to the way one object folds into another when combined.

Amazon's structure isn't any different from that of plenty of others — it's the old object-manipulation game.

But there's an undeniable enthusiasm behind it, with an overall goofy tone that throws you plenty of interesting scenes, problems, and people.

You'll find the game system familiar if you've played Martian Memorandum or Countdown. You run things with the mouse — though a mouse/keyboard combo speeds things up appreciably in some of the timed puzzles — and a bar showing the usual adventure-game icons appears at the bottom of the screen. Screens are drawn with nuance and gorgeous color, but during conversations, animated digitized portraits of actors assume the roles, appearing in windows and speaking at least a couple of lines aloud. Such clips run the risk of looking like a bad super-8 home movie of the late '60s, but the images are small and crisp.

Access has made some improvements since Martian Memorandum. The two-character episodes are among the best parts of this game. The on-line hint level — way too accessible in Martian — is now set as part of the configuration file, which you can change only by erasing it and configuring the game anew. And Amazon's text seems to have been much more rigorously checked for typos.

But piranhas do seem to have munched at Amazon's edges. Its creators haven't paid much attention to the little matters that prevent play from becoming annoying. And Amazon can get annoying.

Take saved games, for instance. When you die, the game doesn't produce a sensible load/restart/quit box, but instead loads the game's first scene, and you have to restore manually from there. The current saved game doesn't remain highlighted from load to load or save to save, making you skip down to the appropriate filename each time you save and reload. Occasionally, characters appear to walk through people and objects. And there's no easy escape from the introduction: You can't just tap the escape key once and be done with it.

And although Amazon's broken into 14 episodes, many aren't self-

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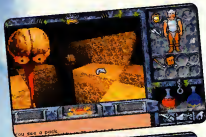
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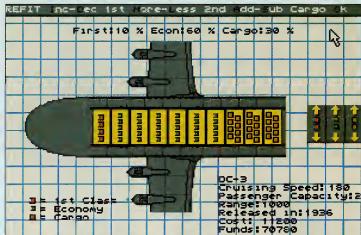
contained. You may not need items from one section until several episodes down the road. Because the game often lets you proceed whether you have everything or not, though, you'll need to backtrack frequently and replay completed sections to recover a critical object stowed in some obscure spot. There are all manner of tiny, mundane, part-of-the-backdrop-type items in the game — much as in Interplay's *Future Wars*, and it's part of Amazon's charm — but this repetition tends to make play feel like work.

Then there's the game's super-VGA support. Access touts it prominently on the package. Just as in *Links 386 Pro*, it's easy to configure; the game comes with most of the popular SVGA drivers, and an auto-detect program finds the right one. And, to be sure, the images are sharp — more like looking at a set of snapshots than computer-game graphics. This mode is (intentionally, I think) rather like being at the movies, and the play screen now occupies a quarter of the screen, side by side with the inventory. The border is filled with clickable synopses of completed episodes.

It's unfortunate, though, that SVGA doesn't really add anything to the experience, and may even detract from it. It's certainly more convenient to skate the mouse directly between playfield and inventory, but some speed is sacrificed in the search for the correct object — tiny items are now infinitesimal — and the mouse suffers from a certain flakiness.

It's a nice experiment, anyway. Amazon is more playable — and still absolutely scrumptious-looking — in standard VGA. And the game, my friends, is superb.

Access Software, 4910 West Amelia Earhart Drive, Salt Lake City, UT 84116, (800) 793-0073; IBM PC or compatible, 12MHz/286 or faster, 33MHz/386 recommended, 640K RAM, 540K free; VGA, super-VGA recommended; supports AdLib, Roland MT-32, ProAudio Spectrum, SoundBlaster, SoundBlaster Pro, Sound Source; requires mouse, hard-disk drive, 8MB free; \$69.95



Air Bucks gives you the world, but only one static, sterile view.

AIR BUCKS

By Wayne Kawamoto

If you think running your own airline might be fun, Impressions' *Air Bucks* is just the ticket.

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LAND HO

The *Air Bucks* program features a miniature economics engine that introduces random variables and determines market conditions. In other words, don't expect to slip into the jet stream on auto-pilot. First, you decide what routes to set up and purchase the right to land at your choice of airports. Your love for New York doesn't mean it's the right place for your airline, for instance. A big city has a big population and lots of

potential air travelers, but you might want to concentrate on more-exotic locations or carve out a niche in smaller cities.

The planes you buy for your routes also make a difference. Passengers prefer faster planes; slower planes that carry more people are lucrative, but come with higher maintenance costs. You also set the ratio of first-class to coach seats and determine how much space to reserve for cargo. You might even spend a little extra to make your plane more comfortable for passengers.

As you'd expect, ticket prices affect sales and, ultimately, profits. You can price your tickets high and sell fewer seats, or you can sell at a lower price and hope to fill those planes. Another factor is the price of oil. If *Air Bucks* is in financial trouble, a bank may extend an emergency loan, or you can sell stock to raise extra cash. Historic events also intervene.

AIR TIME

Any combination of human players and the computer can control the four airlines. Head-to-head competition with other people makes for potentially exciting game play, as players can swap, negotiate, and form alliances. Playing with several participants and one keyboard (there's no modem play) is quite awkward, though.

You stumbled back to your office after a long day of detective work. But before you can get cozy with a whiskey bottle, there's a message waiting on the phone machine.

"This is a life and death emergency!! Young ladies have been disappearing left and right, and now, Donna is missing!! We need your help!!

Please come quickly!!!

Donna's rescue is only the beginning of this sizzling adventure. There's dozens more tantalizing women held against their will. Free them from the evil clutches of General Kaiser, Cobra's psychotic master criminal overlord, and they will thank you in ways that will leave you screaming in ecstasy.

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System requirements:

286 or faster machine
with 640K RAM;
hard disk with min.
12 megabytes of available space required, mouse recommended.

Sound support: EGA, MCGA and VGA (VGA highly recommended) compatible with EGA, MCGA and VGA (VGA highly recommended) Sound Blaster Pro, Adlib Gold

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R

Rated R (This program is voluntarily rated due to the partially violent and adult nature of the graphic imagery). This program is intended for mature audiences only!! No sales to minor under 18 and where prohibited by law.

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Air Bucks feels much like Micro-Prose's popular and highly acclaimed simulation Railroad Tycoon. Both deal with expanding transportation empires during historically prosperous times. Railroad Tycoon and Air Bucks both start with great premises, but Air Bucks lacks the polish to really soar.

Part of the fun in Railroad Tycoon is watching your trains travel over the countryside as they deliver goods and passengers. In Air Bucks you can see only one route at a time (a line between cities), and the program tells you in text where your plane is.

It's a minor point, but tiny planes would provide time perspective, let you know at a glance where your competitors are flying, and inject some life into an otherwise boring 16-color VGA screen. Air Bucks' graphics images are subpar when compared with current entertainment-software standards.

TURBULENCE AHEAD

The interface is rough in places. To select airports you click on them with the mouse. But with one view of the entire earth, cities such as Pittsburgh and Boston are only a millimeter apart. Air Bucks needs a zoom feature desperately.

The controls for setting a route and assigning a plane aren't intuitive, either. Unless you follow the manual step by step, you probably won't be successful getting your plane off the ground. Also, the pull-down menu interface lacks feedback to tell you what command you're selecting.

In the end, Air Bucks is a solid strategy game, but falls short in a couple of areas. According to Impressions Software, an upgrade is in the works. As it stands, Air Bucks is fun to play, but needs some refinement before it really takes off.

Impressions Software, 7 Melrose Drive, Farmington, CT 06032, (203) 676-0127; IBM PC or compatible, 386SX, 16MHz or faster recommended, 640K RAM; VGA, supports AdLib, Sound-Blaster; requires hard-disk drive; mouse recommended; \$59.95

CARRIERS AT WAR

By Ed Ferrell

The Marines may have raised the flag on Mt. Suribachi, Iwo Jima, but the war in the Pacific was a naval war first and foremost, one flushed with images of flashing fighter planes, fast PT boats, and the mightiest warships that ever turned a screw.

SEARCH AND DESTROY

Carriers at War puts you in the commander's chair for six crucial battles in the Pacific — from Pearl Harbor and Coral Sea to the Great Marianas Turkey Shoot. You have a lot of responsibility, but your orders are simple — seek out and destroy enemy carriers before they do the same to you.

Strategic Studies Group has put a lot into this game to make sure it takes a lot out of you. Head-scratching, pre-radar, hide-and-seek maneuvering can put your fleet in a position to surround the enemy, or lead you right into their trap.

You control the naval and air forces of either side in the Pacific, but the most important decisions you make are those that involve carriers, the queen of the seas.

Some aspects of carrier warfare smack of playing center field. You wait and watch; then, just when you go to scratch, there's a deep ball hit to the fence. That's Carriers at War. You do more looking than seeing, even as you play the grand-scale Midway scenario. But when you do find the enemy, all hell breaks loose.

If you need to squeeze your Thrustmaster to enjoy computer games, pass by this one. The only thing animated in Carriers at War is your mouse rolling on its pad.

Its VGA graphics include colorful action stills with each order screen, and the surface-combat display shows an overhead view of your task force, but the buzzers and bells in this game

are inside its strategic engine, not painted on screen.

NEEDLE IN A HAYSTACK

You'll play most of this simulation from maps on the orders screen, where you point-and-click ship icons to issue orders to move, refuel, or launch air operations.

Detailed information on individual ships includes dimensions and displacement, armor and armament. But you can't do anything to an enemy you can't see, so the first order of business is to get some planes in the air.

Select the size of each search group and pick a sector for it to cover. You could send everyone up to look everywhere, but then you wouldn't have an attack force ready. The best searches slice through vast areas of open sea with a minimum of aircraft. As supreme commander, you also control searches from any nearby land bases.

In time you'll receive sighting reports, but sightings from WWII carrier-based planes were notoriously unreliable. Weather and water conditions combined with the adrenaline rush of inexperienced pilots to create false alarms, a fact faithfully re-created here.

Each sighting includes location, who made the sighting and when, the weather condition, and an estimate of the enemy task force's composition, heading, and speed.

But is it reliable? You may need two or three separate sightings to convince yourself that something's really there. Even the time of each sighting is important. Has the enemy had time to change its location? Should you send your strike force to the place where the enemy was, or where you think they'll be by the time you get there?

Carriers at War's combat resolution takes numerous factors into account, and a dynamic damage system depends, at least in part, on the quality of each ship's damage-control crews. Ships with poor damage control may sink after only a few hits, so be sure to fly heavy air patrols over your most-vulnerable vessels.

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Carriers at War takes you into harm's way in the Pacific theater of WWII.

The game's well-researched manual includes a thorough history of the Pacific campaign; it's peppered with anecdotes and photographs. Maps of the war zones are included to aid your effort, and a scenario designer is planned as a future add-on.

This game is a superb simulation of the awesome carrier battles of WWII. Hundreds of ships and aircraft are individually modeled, and an intuitive interface makes entering the action easy. Support craft from seaplane tenders to subs round out your command, and if you choose to play the Japanese side, the inscrutable kamikazes await your orders. It's a studied look at naval strategy, with as much historical realism as you'd want from a military simulation. Somehow the lack of fancy, motion-filled screens only enhances the intensity and uncertainty of the game's carrier battles.

The reality of war figures prominently in the performance of the various task forces in the game—but go ahead, be daring. Play the Allies at Pearl Harbor. Maybe you can surprise them.

Strategic Studies Group, 8348 Monticello Drive, Pensacola, FL 32514, (904) 494-9373; IBM PC or compatible, 640K RAM; EGA, VGA; supports AdLib, Sound-Blaster; requires mouse, hard-disk drive, 1.2MB free; \$69.95

V FOR VICTORY BATTLESET 1

By Peter Dlafson

Realism versus fun: It's a war-game feud as old as hexagons and four-movement-point hills. If you go with realism, you risk scaring off the folks who'd like to throw a switch and fight, but don't feel like looking up subsection B of variant II under section 12 of rule 7.2.1. Play to entertainment and you risk running afoul of the hard-core gamers who'll moan that the game isn't serious. What's a designer to do?

Three-Sixty Pacific, true to its tradition of making the complex accessible, seems to have found safe haven in that no man's land with V for Victory Battleset 1: D-Day Utah Beach—the first of a new war-game series.

It's a passel of five scenarios and a campaign game set on France's Cotentin Peninsula during the two months following the Allied D-Day landings in Normandy. And while it's cast at battalion/company level and uses four-hour turns, it offers both full-fathom-five depth and easy-to-grasp game play.

The fate of the free planets
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LASER SQUAD

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READING ADVENTURES IN OZ

By Cynthia E. Field

But this isn't a simple game — put that right out of your mind. V for Victory is very much a war gamer's war game, with two manuals (one of them with 156 pages), a manual supplement, a troubleshooting guide and addendum, and two charts. Listing the features would consume more pages than PCGames can afford. They include access to virtually every aspect of the campaign you could imagine, but are presented in such a way that you don't feel as though you're fighting the game system instead of the enemy.

Is it fun? Yes, as long as you qualify that word *fun*. In a field in which some games wear complexity on their sleeves like a badge of honor, fun is less a matter of miniature newsreels (à la Patton Strikes Back) than of the game not being unduly burdensome. The only burdensome thing here is reading the small print in the information boxes. There's an overall sense of the game not as tangled and sprawling, but small and solid — sort of a luxury compact of a war game whose doors go "chunk" when they slam.

It's an impression only reinforced by the dense, glimmering colors; by the click-and-drag movement scheme (little red arrows charting the optimal path); and by a pleasant array of tightly focused scenarios, from mopping up the lingering German strongholds after the capture of Cherbourg to an SS corps' attempt to drive a wedge between the Utah and Omaha beachheads. (Title of this first battle-set aside, the landing itself isn't included; the campaign game starts on June 7, 1944, with a good-sized chunk of territory already in Allied hands.)

There's an enormous amount to like about V for Victory. It uses a miniature VCR interface (called the *command box*) for more-detailed order assignments — for example, telling a unit to defend, retreat, or hold at all costs when attacked. If you're not up to this military micro-management, V for Victory lets you delegate to your computerized staff the assignment of supplies; fire support from artillery, planes, and

ships; ground-unit movements; or all of the above. Note that you may have trouble winning even the simplest of scenarios, though, if you don't take a personal hand in the planning. Your staff is meticulous, but plodding.

It will delight you that ground support is assigned via a calendar, as though you were just noting down Mom's birthday. And there's a well of on-line help — not just telling you some of what you need to know, but referring to specific pages of the manual.

Finally, while there's always something sweet-tempered and elegant about Macintosh-to-IBM conversions, here the art-deco lines and fonts fit in perfectly with the WWII era.

I can only hope that the computer opponent is turned up a bit in future releases. It's a tough-minded but methodical creature, and I found it all too easy in the campaign game to encircle the German troops guarding the road to Cherbourg. Even Nazis in movies aren't that dumb.

I also have to wonder whether Utah Beach was the best choice for the first offering in what's planned as a lengthy series. True enough, this theater is a nice, manageable size, and the scenarios are diverse, but the campaign game is essentially a one-hex-at-a-time slugfest through the hedgerows — especially when playing as the Allies — and slugfests don't offer many opportunities for strategy.

There's plenty of time for more scenarios, though. At press time, battlesets were planned around Velikiye Luki, a Russian Front battle; the airborne assault on Holland; Operation Market Garden; and the first American/German clash in North Africa at the Kasserine Pass.

The hero here isn't so much the game as the game system. And V for Victory is definitely worth fighting for.

Three-Sixty Pacific, 2105 South Bascom Avenue, Campbell, CA 95008, (800) 653-1360, (408) 879-9144; IBM PC or compatible, 386 or faster recommended, 2MB RAM, DOS 5.0 or later; VGA; supports AdLib SoundBlaster; requires mouse; \$69.95

Somewhere over the rainbow . . . comes to the PC screen with Davidson & Associates' Reading Adventures in Oz. This game transforms L. Frank Baum's classic children's tale, *The Wonderful Wizard of Oz*, into an interactive, educational scavenger hunt, flush with animated graphics images, music, sounds, and digitized speech.

The story of Oz comes to life PC-style each time your 4- to 9-year-old child journeys to the City of Emeralds. Just like its magical counterpart in the popular 1938 movie, Davidson's Oz features a resident wizard who ultimately grants each character the object of his or her desire.

But Reading Adventures in Oz is more than just a game. Kids can learn to spell new words, solve riddles, recognize parts of speech, and even follow detailed instructions. What more could the average parent or teacher ask?

WE'RE OFF . . .

Your favorite munchkins can play the game as Dorothy, Scarecrow, Tin Boy, or Lion Cub. Depending on the character you choose, the cursor changes to a hand made of flesh, straw, or tin, or a tawny paw covered with fur.

Other graphics touches are surprisingly clever. For instance, in one sequence, everyday foods look like vehicles, from a bread-loaf school bus to a banana boat. These visual delights make sojourns in Oz all the more enjoyable.

Moreover, the program's three-dozen brightly colored, imaginatively illustrated scenes feature objects clustered around a specific theme. Household appliances, musical instruments, animals, clocks and timepieces, and kitchen utensils are just some of the props your child can explore during his or her travels along the Yellow Brick Road.

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Don't Copy That Floppy



Over the rainbow . . . kids will discover the adventure of reading in the land of Oz.

Anticipation is what makes this game so appealing. The strategy that works best when you don't know what to expect next is one that comes naturally to kids: Click on everything in sight. When you click on an object, a name tag almost always pops up, showing kids new words or reinforcing the meaning or contextual setting of familiar terms. The program targets some 400 vocabulary words, most of which are only one or two syllables long.

A well-placed mouse click can really get things moving, too. You can coax Polychrome and Button Bright to play frisbee, precipitate a volcanic eruption in a scene from prehistoric Oz, or set some toes tapping to the rhythms of the Oz bug orchestra. Sound effects include rock music, animal chatter, and munchkin giggles.

In the easiest of the game's three levels, preschoolers explore the land of Oz freestyle, learning new words and associating them with objects. At higher levels, learning becomes more structured or goal oriented as the child tries to find the Wizard's messenger in each scene. Messengers challenge kids to solve language problems, such as finding a word that ends with *n*. Higher-level messages involve more demanding tasks, such as finding a musical instrument used by a bug.

Mouse holes, doorways, and other detours often lead the way to additional adventure. To get out of these sometimes prickly situations, fill in the blank or answer a riddle correctly. To win the game, take your cue from the Wizard's messages, click on target objects, and drag their name tags to your goodies bag. If you snag the wrong word, the Bag Guard punts the object back to its original position in the scene.

I'LL GET YOU, MY PRETTY

There are no penalties for goofing up. After collecting the required number of goodies, you're transported to the City of Emeralds, where the Wizard grants your character's wish.

One of the most-enticing features in Reading Adventures in Oz is also one of the most disappointing. The program includes digitized human speech—but not nearly enough of it. Level 1, designed for prereaders, offers no speech support whatsoever—and that's a shame. Level 3, designed for experienced readers, doesn't include speech, either.

Level 2, for early readers (first- and second-graders), offers friendly, reassuring male and female voices reading each of the Wizard's messages aloud. But on-line help is mute. Despite the disappointment in quantity, speech quality is top-notch.

send for the Loremaster



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Speech issues aside, Davidson needs to tweak Reading Adventures in Oz in a couple of other ways. First, after you click on an object, you have to drag the hand or paw cursor aside before you can read the object's name tag. Second, when you choose a game level, the selected button pops out, but when you make a choice in the game's control panel, the selected button pushes in. Thanks to Davidson & Associates, *The Wonderful Wizard of Oz* has moved to the PC, where Reading Adventures makes children self-directed participants in their own learning. It doesn't take a wiz to see the value in that.

Davidson & Associates, P.O. Box 2961, Torrance, CA 90509, (800) 545-7677, (800) 556-6141; IBM PC or compatible, 12MHz; 286 or faster, 640K RAM, DOS 3.3 or later; VGA; requires mouse, hard-disk drive, 5MB free space; supports Echo II PC, IBM Speech Adaptor, IBM ACPA, ProAudio Spectrum 16/Plus, SoundBlaster, SoundBlaster Pro, Sound Galaxy, Sound Source, Speech Thing, ThunderBoard, Tandy, PS/1; \$59.95

REBEL SPACE

By Peter Olafson

"Keep it simple, stupid." KISS may not have made it into the American Acronym Hall of Fame, but it deserves a place right up there with SNAFU, RADAR, and SCUBA.

And sometimes, just sometimes, game makers remember KISS. That's the take on Prodigy's Rebel Space, which is both a tribute to the virtue of straightforward simplicity and to a game's ability to drape itself in a sort of digital Emperor's Clothes. You can learn the rudiments of this galactic empire-building game in a wink, get into the thick of things overnight, and finish a game in as little as five weeks—all the while never feeling that what you're about is at all simple.

This joint effort of Beyond Software (the folks behind SST's Tony LaRussa

Ultimate Baseball and the Savage Frontier AD&D series) and the on-line network Prodigy is a spare and elegant 50-player version of the classic game of conquest set against the background of a collapsing empire. This foundation may have grown fat in its computer incarnations over the last decade, but the creators of Rebel Space left the baggage of minutiae behind and stayed close to the basics, with results at once pleasant and immensely accessible.

Playing the game is as much of a breeze as using Prodigy. You can configure Rebel Space to your schedule—anywhere from two to five turns per week—rather than be beholden to the game's. The plain-speaking documentation can be sent straight to your printer, doesn't take up more than 50 or so of Prodigy's paragraph-sized pages, and is laden with hints and good advice.

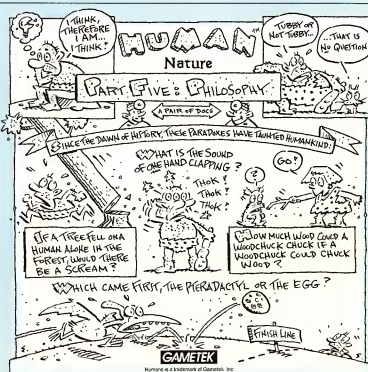
There's nothing too complex in taking your turn, either. You simply set directions for your four starships

in this galaxy, indicate which of seven all-important modules each ship will collect upon docking at a friendly starbase, and choose which rebellion (*Militarist, Scientist, or Environmentalist*), if any, you want to join.

The next morning, the results turn up in your electronic mailbox— as much as 20 to 30 pages listing, among other things, planets taken, the progress planetary civilizations and ecologies have made, battles fought, and damage sustained and given. Think of it as a play-by-mail game that uses Federal Express.

You'll also get a nice map suitable for plotting starship courses for your next turn, or the hot, laser-assisted death of the alleged ally who crossed you when push came to shove. A printer isn't required to play, but I can't recommend it strongly enough.

One day, for instance, I was heartened to read reports that my starship *Lazarus* seemed to be making progress against two Militarist starships in the



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good one. And keep a spot warm for me in Rebel Space. I'll be back.

Prodigy Services Company, 445 Hamilton Avenue, White Plains, NY 10601, (800) 776-3449; IBM PC or compatible, 512K RAM, DOS 2.0 or later; Hercules, CGA, EGA, VGA, MCGA; requires 1200- or 2400-bps modem; mouse, printer recommended; \$24.95 25-turn game, \$49.95 Prodigy Startup Kit, \$14.95 monthly fee

TAKE-A-BREAK! CROSSWORDS

By Barry Brenesal

Battle of N62; that the Omni had found a new desert planet; and that the folks on O71 "have learned to print and bind books. Their libraries have become centers for learning for scholars from across the galaxy, and their universities are the finest of any comparable civilization."

Okay, so the descriptions are canned — not complex text splicings relying on actual game conditions — but you'll read them as eagerly as a doting parent follows a first-grader's report card. Rebel Space isn't Civilization, but it's better than just being told that your culture rates a 6.

At first, it's a big, empty galaxy. But as you begin to wander away from the central axis of starbases and jump points, you'll begin to run into planets — Stone Age planets, Eden-like planets, industrial planets, and, at length, somebody else's planets. There are 49 other little starlord-wannabes in every game. Before long, you'll be glad your starships have shields.

Rebel Space's mechanics may follow the cry for KISS, but its play is anything but. Before long, you'll find there are almost chess-like intricacies to movement, such as adding "mods" (starship parts, from drives and scanners to lasers and environmental units) and building your planetary network. There's also the human element. There's no way to send

messages within the game, but once you're out of it and in the *Stargate Café* (the game's dedicated bulletin board) chops are busted, victories crowded over, and promises broken. To skip the *Stargate* is to play the game wearing a blindfold.

Hands-on players who like to micro-manage may find themselves a bit at loose ends here, as elements such as combat strategy and planetary development are out of your direct control and can only be influenced in broad terms. But for my part, I'll settle for being able to name my starships (maybe after the Simpsons); this is such an Everyman game I can't imagine anyone not doing it.

The only burdens Rebel Space places on you are record-keeping related, such as building an annotated galactic map. Even the turn deadlines aren't a problem. If you can't make one, your starship captains act on their own initiatives. (When I took a week or so off to write, I was tickled to find that my little empire had more than doubled in size while on autopilot.)

And there are oh-so-obvious additions to Rebel Space, things that would expand into any future sequel — the ability to create customized starships or modules, for instance. But that's just burdening a delightful premise with all sorts of baggage. KISS, Prodigy. The instinct was a

You've flipped enough cards in solitaire to qualify as a Vegas blackjack dealer. You're bored with the game, but you still want a respite from the daily work you do in Windows.

How about a crossword puzzle or two to stretch your mental muscles? That's the premise behind Dynamix's new Take-a-Break! Crosswords. It's Windows-based, so you can just retreat from your word processor, graphics package, or database, and with a couple of clicks switch to Crosswords for a little relaxation. Of course, there's more to it than that. And there's less, as well.

ON THE PLUS SIDE

The more part comes in the form of various options that customize the puzzles in ways impossible in print. A good example is *Autocheck*, which erases incorrect answers on the fly, avoiding those situations in which you've entered four interconnected, dependent words, only to discover an hour later that the first word was wrong.

Another feature, *Undo*, completely removes words you've entered; because the puzzle's on a PC, erasure comes easy and sans smudging. Unfortunately, it works only while you're typing a given word, not once you've moved on. Erasing words at a later stage requires deleting each letter individually, a tedious process at best.

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Puzzle fanatics can tackle a new medium — but it's not exactly *The New York Times*.

Take-a-Break! Crosswords takes advantage of Windows by letting you choose between 16- and 256-color modes, both of which are completely color-customizable. You also can print a puzzle during any part of the process; because you're working in Windows, you've got support for virtually any printer model.

Another set of brand-new, chrome-plated extras involves game rules. Take the clock, for instance: It counts off 14 minutes from the start of any game. Finish early, and you get bonus points calculated by the minute; finish late, and you're penalized.

This ability to score a game adds a whole new dimension to crossword puzzles — those in newspapers are simply all-or-nothing affairs. Want hints? Take-a-Break! Crosswords gives you the luxury of choosing among several hint categories, including *Single Letter*, *Single or All Vowels*, *Single or All Consonants*, and *Whole Word*. Hints come at a price, though: You lose points when you ask for help. The stronger the hint, the more points slip away.

If all this sounds intimidating, you can always turn off the score display and duplicate the more leisurely print-style approach. Or practice a few puzzles with full hints first to boost your confidence. Take-a-Break supplies 375 crosswords in four sizes

(from 13-by-13 to 19-by-19) and three levels of difficulty.

PUT IT TO THE TEST

Here's where the *less* part of Take-a-Break! Crosswords pops up. While these puzzles are rated *easy*, *medium*, and *hard*, you really won't notice much difference. Hard puzzles are relatively tame compared with many of the monthly magazine compilations in print — let alone the ultimate test of the fanatic, *The New York Times'* crossword.

There are also few theme puzzles, and none of the anacrostics, diagramless, or other popular variations. That gives the game's large crossword sampling a smaller, blander feel than should be the case when the PC is your partner.

That aside, Take-a-Break! Crosswords is an excellent addition to Sierra On-Line's fine series of more-traditional board games for the PC, which includes such titles as the *Hoyle Book of Games* line. And it sure beats the heck out of solitaire.

Dynamic/Sierra On-Line, 99 West 10th, Suite 224, Eugene, OR 97401, (503) 343-0772; IBM PC or compatible, Windows 3.0 or later, 2MB RAM; VGA; requires hard-disk drive, mouse recommended; \$49.95

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Harpoon's BattleSet Enhancer features the latest weaponry and fighter aircraft.

HARPOON: BATTLESET ENHANCER

By Ed Ferrell

Keeping up with the world's rapidly changing military geography is no easy task. Three-Sixty, most famous for its vaunted naval simulation Harpoon, rises to the challenge with Harpoon Designers' Series: BattleSet Enhancer, an add-on meant strictly for the serious player.

This \$50 package adds 12 new Harpoon scenarios for every battleset you already own. BattleSet Enhancer updates Harpoon by including dozens of new countries, hundreds of new weapons platforms, and an upgrade to the latest version of the Harpoon master game (but not the game itself).

A bit of background: Harpoon is the most realistic naval-warfare simulation available. It has sold more than 80,000 copies and is backed up with three additional battlesets and a scenario editor. Harpoon's fans support newsletters, bulletin boards, and active on-line clubs.

And, in fact, BattleSet Enhancer is very much a product of those fans. Avid Harpoon players submitted

scenario ideas to Three-Sixty even before the scenario editor was released.

Each of the new scenarios in the Designers' Series was selected from the best of these unsolicited offerings, the best from the company's beta testers, and the best from the Harpooners who hang out on networks.

Habitual Harpooners may recognize *JIVA* as the sysop (system operator) of the Harpooners' Bulletin Board. His *Gonzo Station* scenario for the Indian Ocean & Persian Gulf BattleSet represents an Iraqi power play that doesn't stop at Kuwait. *Cobalt Shiva* should be a familiar name to CompuServe users who play the game; he offers several scenarios that take place during the *First Eurasian War* (1996 to 1999). All scenarios emphasize the changing political tensions in this post-Cold War era.

Adding new countries means adding whole new navies to Harpoon. To the Greenland/Iceland/United Kingdom BattleSet included with the master game, BattleSet Enhancer adds Sweden, Poland, Germany, and Finland. New bases are added to each battleset, along with more weapons.

The Soviet/CIS aircraft carrier *Admiral Kuznetsov*, the U.S. *Ohio*-class ballistic-missile submarine, and the USN SV-22 Osprey tilt-rotor aircraft

are just some of the new platforms included in this add-on. Fully compatible with the scenario editor, each new platform performs in the new scenarios, and is available for use when creating your own war games.

It took work to bring these weapons to Harpoon. The F-14 Tomcat and the Burke-class guided-missile destroyer are included in several variations, as well as several configurations for the *Ticonderoga*-class Aegis cruiser. And thanks to this add-on, the F-15E Strike Eagle and F-117 Stealth Fighter are now available in all battlesets.

Armchair admirals can consider each weapons platform as fodder for the scenario editor, even though you can't edit the weapons themselves. Three-Sixty recognizes that Harpoon's popularity is based on its realism and playability, and by keeping weapons designs firmly in-house, it's trying to retain some control over the simulation.

Whatever edition of Harpoon you now own, this package upgrades the game to the current version, 1.3. Unfortunately, even this one has some bugs, most of which appear when you're playing a large scenario with many platforms. (Three-Sixty will soon update all registered users to version 1.32 at no charge.)

If you're not yet a Harpooner, look for the *Challenger Pack*, a boxed set that includes everything except BattleSet Enhancer. You get Harpoon, all the battlesets, and the scenario editor for only \$79.95.

A large part of players' fascination with Harpoon (which isn't easy to play) is its realistic feel. A captain at the Naval Post-Graduate School who uses Harpoon for his operational-analysis course recently produced results with this simulation similar to those obtained with a Cray supercomputer and \$44 million worth of software. At \$49.95, BattleSet is a steal. □

Three-Sixty Pacific, 2105 South Bascom Avenue, Suite 165, Campbell, CA 95008, (800) 653-1360; IBM PC or compatible; EGA, VGA; requires Harpoon 1.2 or later, individual Battlesets; requires hard-disk drive; \$49.95

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THE BIG ONE

By Jim Ball

When you tire of zipping around the skies like a rocket banshee or blasting Iraqi tanks in the sands — when you lust after a bit of racy art on the nose of your aircraft — turn back the clock to World War II and sit your backside in the cockpit of one of the century's great airplanes, the **B-17 Flying Fortress**. She may not be pretty, she may not be fast, but she sure earns her name.

Flying Fortress is a bomber simulator that puts you in command of a B-17G in the 8th Air Force based in England during the Second World War. Featuring an excellent flight model and impressive depth of detail, this simulation isn't for the casual flyer. If you're looking for immediate gratification and don't want to invest the time to train properly, look for another mission.

You begin in 1942, at the onset of the Allied daylight bombing campaign on German-held Europe. Early on, the Allies had no suitable long-range fighter escorts; bombers relied on the combined firepower of a tight formation for protection. You're positioned in "Purple Heart Corner" — the back right — a

favorite target of Luftwaffe fighters. Make it through your trial by fire, though, and you and your aircrew will survive long enough to enjoy the protection of your "little friends," the P-47 Thunderbolt and P-51 Mustang, which help you drive deeper into the Nazi war machine.

Flying Fortress is as much a crew simulator as a flight sim. The aura of serving on a B-17 comes through as you and your men work together to accomplish your mission and get back home alive. As pilot of your plane, you manage your crew to repair damage, fight fires, administer first aid, and man vacant positions at critical times.

During bombing runs and encounters with enemy fighters and flak, you assign crew members to their battle stations. Move the bombardier from the nose

turret down to his position at the Norden bombsight, jump into the tailgunner's spot and shoot bandits on your six, or pilot your aircraft through the action as you stay in tight formation and nurse damaged engines.

Operating the Norden is one of the most exciting aspects of the game, and it plays well. Just as in WWII, you must fly level over the target for about 20 seconds. When you take over the bomber, you use the controller to center the crosshairs on the target. After tracking for the proper time, the bomb-release cue lights up and prompts you to drop your load. You can watch through the bombsight, from the bay, or, better yet, from the target.

Flying the B-17 isn't easy. Even with four healthy engines, you have to be on your toes during takeoff and landing. Inevitably,

you'll lose an engine or two to air attack, ground fire, or simple mechanical problems: a debit that makes landing a bit of a knuckle biter. There's a lot of airplane in your hands and you're totally absorbed in it — the sense of realism is incredible.

While under attack from enemy fighters, you can man any one of the gun stations. The difficulty of hitting a moving target from a moving airplane is represented realistically here, so it's best to use the "zone method" of firing: Aim at an expected intercept point, fire, and let the target fly through your stream of bullets. Because you can't practice gunnery in training mode, you have to learn the hard way — in combat.

B-17 Flying Fortress captures the essence of the plane, the mission, the risks, and the rewards of its historical counterpart. The designers have paid attention to detail, so be prepared to learn about your aircraft, your crew, and your targets. Besides, the manual's great reading. Bombs away! ☐



Trial by fire: no fighter escorts here — just plenty of weapon power and a tight formation. Crew morale and experience up your chances of success and survival as Flying Fortress sends you on a series of bombing runs in a WWII B-17.

MicroProse Software, 180 Lakefront Drive, Hunt Valley, MD 21030, (410) 771-1151; IBM PC or compatible, 16MHz or faster, 640K RAM, DOS 5.0 or later; VGA, MCGA; requires hard-disk drive, 7MB free; supports AdLib, Roland, SoundBlaster; joystick, mouse recommended; \$69.95



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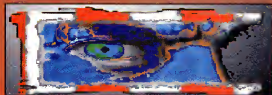
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